



0060057

25 June 2003

Mr. Steve Trent
Fluor Hanford Inc.
825 Jadwin Ave.
Richland, WA 99352

Subject: Contract No. 630
Analytical Data Package



Dear Mr. Trent:

Enclosed are the hard copy analytical reports for the batch number/fraction indicated (marked X) in the following table:

LvLI Batch #	0305L339,357,366, 372
SDG #	H2195
SAF #	F03-006
Date Received	5-03,7,8,9-03
# Samples	5
Matrix	Soil
Volatiles	X
Semivolatiles	X
Pest/PCB	X
DRO/GRO/KRO	X
Herbicides	
GC Alcohol	X
Metals	X
Inorganics	X

The electronic data deliverable (EDD) will be emailed shortly. If you have any questions, please don't hesitate to contact me at (610) 280-3012.

Sincerely,
Lionville Laboratory Incorporated


Orlette S. Johnson
Project Manager

RECEIVED
AUG 11 2003
EDMC

Lionville Laboratory, Inc.
VOA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2195

DATE RECEIVED: 05/03/03

LVL LOT # :0305L339

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W84	001	S	03LVJ056	04/30/03	N/A	05/17/03
B16W85	002	S	03LVJ055	04/30/03	N/A	05/16/03
B16W85	002 MS	S	03LVJ055	04/30/03	N/A	05/16/03
B16W85	002 MSD	S	03LVJ055	04/30/03	N/A	05/16/03

LAB QC:

VELKRT	MB1	S	03LVJ056	N/A	N/A	05/17/03
VELKRT	MB1 BS	S	03LVJ056	N/A	N/A	05/17/03
VELKSX	MB1	S	03LVJ055	N/A	N/A	05/16/03
VELKSX	MB1 BS	S	03LVJ055	N/A	N/A	05/16/03



Lionville Laboratory, Inc.
VOA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2195

DATE RECEIVED: 05/07/03

LVL LOT # :0305L357

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W86	001	S	03LVJ055	05/05/03	N/A	05/16/03

LAB QC:

VBLKSX	MB1	S	03LVJ055	N/A	N/A	05/16/03
VBLKSX	MB1 BS	S	03LVJ055	N/A	N/A	05/16/03

Lionville Laboratory, Inc.
VOA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2195

DATE RECEIVED: 05/08/03

LVL LOT # :0305L366

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W87	001	S	03LVJ056	05/06/03	N/A	05/17/03

LAB QC:

VBLKRT	MB1	S	03LVJ056	N/A	N/A	05/17/03
VBLKRT	MB1 BS	S	03LVJ056	N/A	N/A	05/17/03

Lionville Laboratory, Inc.
VOA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2195

DATE RECEIVED: 05/09/03

LVL LOT # :0305L372

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W88	001	SO	03LVJ056	05/07/03	N/A	05/17/03

LAB QC:

VBLKRT	MB1	S	03LVJ056	N/A	N/A	05/17/03
VBLKRT	MB1 BS	S	03LVJ056	N/A	N/A	05/17/03



Client: TNU-HANFORD F03-006
LVL #: 0305L339, 0305L357,
0305L366, 0305L372
SDG/SAF # H2195/F03-006

W.O. #: 11343-606-001-9999-00
Date Received: 05-03,07,08,09-2003

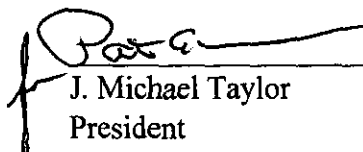
GC/MS VOLATILE

Five (5) soil samples were collected on 04-30-2003 and 05-05,06,07-2003

The samples and their associated QC samples were analyzed according to criteria set forth in Lionville Laboratory OPs based on SW 846 Method 8260B for TCL volatile target compounds on 05-16,17-2003.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
2. All samples were analyzed within holding time with the exception of samples associated with LVL # 0305L339. However, this volatile analysis was added later and performed at client request.
3. A non-target compound was detected in sample B16W84.
4. All surrogate recoveries were within EPA QC limits.
5. All matrix spike recoveries were within EPA QC limits.
6. All blank spike recoveries were within EPA QC limits.
7. The method blanks 03LVJ056-MB1 and 03LVJ055-MB1 contained the common laboratory contaminants Methylene Chloride and Acetone at levels less than the CRQL.
8. Internal standard area and retention time criteria were met.
9. A spectral search was conducted for the compound 2-Pentanone; however, this compound was not identified in the samples.
10. "I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."


J. Michael Taylor
President
Lionville Laboratory Incorporated

06-09-03
Date

som\group\data\voatnu-hanford\0305-336,357,366,372.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 32 pages.

GLOSSARY

DATA QUALIFIERS

- U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.
- J = Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- D = Identifies all compounds identified in an analysis at a secondary dilution factor.
- I = Interference.
- NQ = Result qualitatively confirmed but not able to quantify.
- A = Indicates that a TIC is a suspected aldol-condensation product.
- N = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.
- X = This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).
- Y = Additional qualifiers used as required are explained in the case narrative.

mmz\10-94\gloss.bna



GLOSSARY

ABBREVIATIONS

BS	=	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.
BSD	=	Indicates blank spike duplicate.
MS	=	Indicates matrix spike.
MSD	=	Indicates matrix spike duplicate.
DL	=	Suffix added to sample number to indicate that results are from a diluted analysis.
NA	=	Not Applicable.
DF	=	Dilution Factor.
NR	=	Not Required.
SP, Z	=	Indicates Spiked Compound.

mmz\10-94\gloss.bna



TECHNICAL FLAGS FOR MANUAL INTEGRATION

Manual quan modifications or integrations are performed routinely to improve the data quality for a variety of technical reasons. Documentation of these modifications should be clear and concise. The following "flags" are used to indicate the technical reasons for quan modifications:

- MP - Missed Peak: manually added peak not found by automatic quan program.
- PA - Peak Assignment: quan report was changed to reflect correct peak assignment.
- RI - Routine Integration: routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the dichlorobenzene isomers on the VOA packed column and benzo(b)fluoranthene/benzo(k)fluoranthene which are poorly resolved on the BNA column.
- SP - Split Peak: the automatic integration improperly split the peak; a manual integration was performed to get the correct area.
- CB - Coelution/Background: peak was manually integrated to eliminate contribution from coeluting compounds, background signal, or other interference.
- PI - Proper Integration: a peak with poor or inconsistent integration (e.g., excessive tail) was properly integrated manually.

Lionville Laboratory, Inc.

Volatiles by GC/MS, HSL List

Report Date: 06/05/03 12:29

RFW Batch Number: 0305L339

Client: TNUHANFORD F03-006 H2195 Work Order: 11343606001 Page: 1a

Cust ID:		B16W84	B16W85	B16W85	B16W85	VBLKRT	VBLKRT BS
Sample	RFW#:	001	002	002 MS	002 MSD	03LVJ056-MB1	03LVJ056-MB1
Information	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.04	1.04	1.06	1.00	1.00
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Surrogate	Toluene-d8	100 %	108 %	103 %	106 %	98 %	101 %
Recovery	Bromofluorobenzene	109 %	118 %	118 %	122 %	113 %	111 %
	1,2-Dichloroethane-d4	126 %	123 %	125 %	128 %	123 %	121 %
-----fl-----fl-----fl-----fl-----fl-----fl-----fl-----fl							
Chloromethane		11 U	11 U	11 U	11 U	10 U	10 U
Bromomethane		11 U	11 U	11 U	11 U	10 U	10 U
Vinyl Chloride		11 U	11 U	11 U	11 U	10 U	10 U
Chloroethane		11 U	11 U	11 U	11 U	10 U	10 U
Methylene Chloride		6 B	5 JB	5 JB	5 JB	1 J	2 JB
Acetone		9 JB	15 B	12 B	11 JB	7 J	7 JB
Carbon Disulfide		6 U	6 U	6 U	6 U	5 U	5 U
1,1-Dichloroethene		6 U	6 U	123 %	127 %	5 U	123 %
1,1-Dichloroethane		6 U	6 U	6 U	6 U	5 U	5 U
1,2-Dichloroethene (total)		6 U	6 U	6 U	6 U	5 U	5 U
Chloroform		6 U	6 U	6 U	6 U	5 U	5 U
1,2-Dichloroethane		6 U	6 U	6 U	6 U	5 U	5 U
2-Butanone		11 U	11 U	11 U	11 U	10 U	10 U
1,1,1-Trichloroethane		6 U	6 U	6 U	6 U	5 U	5 U
Carbon Tetrachloride		6 U	6 U	6 U	6 U	5 U	5 U
Bromodichloromethane		6 U	6 U	6 U	6 U	5 U	5 U
1,2-Dichloropropane		6 U	6 U	6 U	6 U	5 U	5 U
cis-1,3-Dichloropropene		6 U	6 U	6 U	6 U	5 U	5 U
Trichloroethene		6 U	6 U	96 %	98 %	5 U	101 %
Dibromochloromethane		6 U	6 U	6 U	6 U	5 U	5 U
1,1,2-Trichloroethane		6 U	6 U	6 U	6 U	5 U	5 U
Benzene		6 U	6 U	95 %	98 %	5 U	97 %
Trans-1,3-Dichloropropene		6 U	6 U	6 U	6 U	5 U	5 U
Bromoform		6 U	6 U	6 U	6 U	5 U	5 U
4-Methyl-2-pentanone		11 U	11 U	11 U	11 U	10 U	10 U
2-Hexanone		11 U	11 U	11 U	11 U	10 U	10 U
Tetrachloroethene		6 U	6 U	6 U	6 U	5 U	5 U
1,1,2,2-Tetrachloroethane		6 U	6 U	6 U	6 U	5 U	5 U
Toluene		6 U	6 U	106 %	113 %	5 U	104 %

* = Outside of EPA CLP QC limits.

Cust ID: B16W84 B16W85 B16W85 B16W85 VBLKRT VBLKRT BS

RFW#: 001 002 002 MS 002 MSD 03LVJ056-MB1 03LVJ056-MB1

Chlorobenzene	6	U	6	U	103	%	108	%	5	U	104	%
Ethylbenzene	6	U	6	U	6	U	6	U	5	U	5	U
Styrene	6	U	6	U	6	U	6	U	5	U	5	U
Xylene (total)	6	U	6	U	6	U	6	U	5	U	5	U
N-butylbenzene	6	U	6	U	6	U	6	U	5	U	5	U

*= Outside of EPA CLP QC limits.

Volatiles by GC/MS, HSL List

RFW Batch Number: 0305L339

Client: **TNUHANFORD F03-006 H2195** Work Order: 11343606001 Page: 2a

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*= Outside of EPA CLP OC limits.

Cust ID: VBLKSX VBLKSX BS B16W86 B16W87 B16W88

RFW#: 03LVJ055-MB1 03LVJ055-MB1 357-001 366-001 372-001

Chlorobenzene	5	U	94	%	5	U	5	U	6	U
Ethylbenzene	5	U	5	U	5	U	5	U	6	U
Styrene	5	U	5	U	5	U	5	U	6	U
Xylene (total)	5	U	5	U	5	U	5	U	6	U
N-butylbenzene	5	U	5	U	5	U	5	U	6	U

*= Outside of EPA CLP QC limits.

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B16W84

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____

SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L339-001

Sample wt/vol: 5.00 (g/mL) G

Lab File ID: 1051707

Level: (low/med) LOW

Date Received: 05/03/03

% Moisture: not dec. 8

Date Analyzed: 05/17/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	8.352	5	J

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B16W85

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____

SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L339-002

Sample wt/vol: 4.80 (g/mL) G

Lab File ID: 1051616

Level: (low/med) LOW

Date Received: 05/03/03

% Moisture: not dec. 7

Date Analyzed: 05/16/03

Column: (pack/cap) CAP

Dilution Factor: 1.04

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B16W86

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____

SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L357-001

Sample wt/vol: 5.20 (g/mL) G

Lab File ID: 1051606

Level: (low/med) LOW

Date Received: 05/07/03

% Moisture: not dec. 3

Date Analyzed: 05/16/03

Column: (pack/cap) CAP

Dilution Factor: 0.962

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====
1.				

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B16W87

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____

SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L366-001

Sample wt/vol: 5.20 (g/mL) G

Lab File ID: 1051711

Level: (low/med) LOW

Date Received: 05/08/03

% Moisture: not dec. 3

Date Analyzed: 05/17/03

Column: (pack/cap) CAP

Dilution Factor: 0.962

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B16W88

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____

SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOLID

Lab Sample ID: 0305L372-001

Sample wt/vol: 4.60 (g/mL) G

Lab File ID: 1051712

Level: (low/med) LOW

Date Received: 05/09/03

% Moisture: not dec. 1

Date Analyzed: 05/17/03

Column: (pack/cap) CAP

Dilution Factor: 1.09

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====
1.				

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKRT

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____

SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL

Lab Sample ID: 03LVJ056-MB1

Sample wt/vol: 5.00 (g/mL) G

Lab File ID: i051706

Level: (low/med) LOW

Date Received: 05/17/03

% Moisture: not dec. 0

Date Analyzed: 05/17/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKSX

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____

SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL

Lab Sample ID: 03LVJ055-MB1

Sample wt/vol: 5.00 (g/mL) G

Lab File ID: j051605

Level: (low/med) LOW

Date Received: 05/16/03

% Moisture: not dec. 0

Date Analyzed: 05/16/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====
1.				

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS[illegible]

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					Price Code 8N		Data Turnaround 45 Days	
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Air Quality <input type="checkbox"/>		
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (72.5'-75')		SAF No. F03-006						
Ice Chest No. ERC-01-038		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express				21
Shipped To REIRA EBERLINE SERVICES (Formerly TMA) 4/14/03		Offsite Property No. R030221		Bill of Lading/Air Bill No. SEE OSA						
POSSIBLE SAMPLE HAZARDS/REMARKS Radioactive Tie TO B16WDO Special Handling and/or Storage COO 140L				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None	
				Type of Container	aG	aG	aG	aG	aG	
				No. of Container(s)	1	1	1	1	1	
				Volume	120mL	60mL	120mL	60mL	60mL	
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions	Tritium - HD		
Sample No.	Matrix *	Sample Date	Sample Time							
B16W84	SOIL	4-30-03	1400	X	X	X				B16WDO
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS		
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (1) Technetium-90; Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 4/22/03		
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Matrix *		
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		S=Soil		
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		SE=Seashore		
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		SO=Solid		
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		SL=Sludge		
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		W=Water		
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		O=Oil		
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		A=Air		
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		DS=Drum Solids		
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		DL=Drum Liquids		
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		TW=Timber		
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		WL=Wipe		
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		L=Liquid		
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		V=Vegetation		
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		X=Other		
LABORATORY SECTION		Received By		Title		Date/Time				
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time				

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-68		Page 1 of 1				
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days			
Project Designation 200-PW-2/200-PW-4 OU - Borchok Soil Sampling		Sampling Location 216-A-37 (C4106); (97.5'-100')		SAF No. F03-006		Air Quality <input type="checkbox"/>							
Ice Chest No. ERC 01-038		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express							
Shipped To EBERLINE SERVICES (Formerly TMA) <i>4/22/03</i>		Offsite Property No. A030 221		Bill of Lading/Air Bill No. <i>SEF 05PC</i>									
POSSIBLE SAMPLE HAZARDS/REMARKS <i>Radioactive</i> <i>TIC TO B16WPI</i> <i>COOL 40C</i> Special Handling and/or Storage				Preservation		Cool 4C	Cool 4C	Cool 4C	None	None			
				Type of Container		aG	aG	aG	aG	aG			
				No. of Container(s)		1	1	1	1	1			
				Volume		120mL	60mL	120mL	60mL	60mL			
SAMPLE ANALYSIS				Chromium Hex - 7196		NO2/NO3 - 353.2		Oil & Grease - 413.1		See item (1) in Special Instructions		Tritium - H3	
Sample No.		Matrix *		Sample Date		Sample Time							
B16W85		SOIL		4-30-03		1238		B16WPI					
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS <i>4/22/03</i>					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		** The laboratory is to achieve a detection limit of 30.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (1) Technetium-99, Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 <i>4/22/03 95C</i>					
<i>MDA/EBERLINE</i>		4/20/03 1430		<i>R. G. G. R. G. G.</i>		4-30-03 1430							
<i>4/20/03 1430</i>		4-30-03		<i>LB 3728</i>		4-30-03							
<i>LB 3728</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
<i>ERC</i>		1000		<i>R. G. G. R. G. G.</i>		1000							
<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<i>ERC</i>		1000		<i>R. G. G. R. G. G.</i>		1000							
<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<i>ERC</i>		1000		<i>R. G. G. R. G. G.</i>		1000							
<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<i>ERC</i>		1000		<i>R. G. G. R. G. G.</i>		1000							
<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<i>ERC</i>		1000		<i>R. G. G. R. G. G.</i>		1000							
<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<i>ERC</i>		1000		<i>R. G. G. R. G. G.</i>		1000							
<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<i>ERC</i>		1000		<i>R. G. G. R. G. G.</i>		1000							
<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<i>ERC</i>		1000		<i>R. G. G. R. G. G.</i>		1000							
<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<i>ERC</i>		1000		<i>R. G. G. R. G. G.</i>		1000							
<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<i>ERC</i>		1000		<i>R. G. G. R. G. G.</i>		1000							
<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<i>ERC</i>		1000		<i>R. G. G. R. G. G.</i>		1000							
<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<i>ERC</i>		1000		<i>R. G. G. R. G. G.</i>		1000							
<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<i>ERC</i>		1000		<i>R. G. G. R. G. G.</i>		1000							
<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<i>ERC</i>		1000		<i>R. G. G. R. G. G.</i>		1000							
<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<i>ERC</i>		1000		<i>R. G. G. R. G. G.</i>		1000							
<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<i>ERC</i>		1000		<i>R. G. G. R. G. G.</i>		1000							
<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<i>ERC</i>		1000		<i>R. G. G. R. G. G.</i>		1000							
<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<i>ERC</i>		1000		<i>R. G. G. R. G. G.</i>		1000							
<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<i>ERC</i>		1000		<i>R. G. G. R. G. G.</i>		1000							
<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<i>ERC</i>		1000		<i>R. G. G. R. G. G.</i>		1000							
<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<i>ERC</i>		1000		<i>R. G. G. R. G. G.</i>		1000							
<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<i>ERC</i>		1000		<i>R. G. G. R. G. G.</i>		1000							
<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<i>ERC</i>		1000		<i>R. G. G. R. G. G.</i>		1000							
<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<i>ERC</i>		1000		<i>R. G. G. R. G. G.</i>		1000							
<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<i>ERC</i>		1000		<i>R. G. G. R. G. G.</i>		1000							
<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<i>ERC</i>		1000		<i>R. G. G. R. G. G.</i>		1000							
<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<i>ERC</i>		1000		<i>R. G. G. R. G. G.</i>		1000							
<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<i>ERC</i>		1000		<i>R. G. G. R. G. G.</i>		1000							
<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<i>ERC</i>		1000		<i>R. G. G. R. G. G.</i>		1000							
<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<i>ERC</i>		1000		<i>R. G. G. R. G. G.</i>		1000							
<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<i>ERC</i>		1000		<i>R. G. G. R. G. G.</i>		1000							
<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
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<i>ERC</i>		1000		<i>R. G. G. R. G. G.</i>		1000							
<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
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<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<i>ERC</i>		1000		<i>R. G. G. R. G. G.</i>		1000							
<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<i>ERC</i>		1000		<i>R. G. G. R. G. G.</i>		1000							
<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<i>ERC</i>		1000		<i>R. G. G. R. G. G.</i>		1000							
<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<i>ERC</i>		1000		<i>R. G. G. R. G. G.</i>		1000							
<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<i>ERC</i>		1000		<i>R. G. G. R. G. G.</i>		1000							
<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<i>ERC</i>		1000		<i>R. G. G. R. G. G.</i>		1000							
<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<i>ERC</i>		1000		<i>R. G. G. R. G. G.</i>		1000							
<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<i>ERC</i>		1000		<i>R. G. G. R. G. G.</i>		1000							
<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<i>ERC</i>		1000		<i>R. G. G. R. G. G.</i>		1000							
<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<i>ERC</i>		1000		<i>R. G. G. R. G. G.</i>		1000							
<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<i>ERC</i>		1000		<i>R. G. G. R. G. G.</i>		1000							
<i>R. G. G. R. G. G.</i>		5-2-03		<i>R. G. G. R. G. G.</i>		5-2-03							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							

LIONVILLE LABORATORY INCORPORATED

SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hartford
 Purchase Order/Project:

DATE: 5-3-03

AF# / SOW# / Release #: F03-006

Laboratory SDG #:

0305L339

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | | | | |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets LVL1 Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

ERC 01-038 / 0.6°C

Laboratory Sample Custodian:

Laboratory Project Manager:

D. Smith

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client <u>TNU Hamford F03-006</u>				Refrigerator #												2																			
Est. Final Proj. Sampling Date				#/Type Container		Liquid																													
Project # <u>11343-606-001.9999.00</u>						Solid												lag lag lag																	
Project Contact/Phone #				Volume		Liquid																													
Lionville Laboratory Project Manager <u>Debbie Johnson</u>						Solid												120 60 120																	
QC <u>SPEC</u> Del <u>STO</u> TAT <u>30 days</u>				Preservatives																															
Date Rec'd <u>5-7-03</u> Date Due <u>6-16-03</u>				ANALYSES REQUESTED		ORGANIC												INORG																	
						VOA		BNA		Pest/PCB		Herb												Metal		CN									
																								Hex		Chrom		NO2/		NO3		Cl-		Sulfate	

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-69		Page 1 of 1				
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days ¹² / ₂			
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (147.5'-150')				SAF No. F03-006		Air Quality <input type="checkbox"/>					
Ice Chest No. FRC 01-063		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express							
Shipped To ECRA ASH EBERLINE SERVICES (Formerly TMA) 4/22/03		Offsite Property No. A030 222				Bill of Lading/Air Bill No. SEE OSPL							
POSSIBLE SAMPLE HAZARDS/REMARKS Radioactive Tie TO B16 WDO Special Handling and/or Storage Cool 4°C				Preservation		Cool 4C	Cool 4C	Cool 4C	None	None			
				Type of Container		aG	aG	aG	aG	aG			
				No. of Container(s)		1	1	1	1	1			
				Volume		120mL	60mL	120mL	60mL	60mL			
SAMPLE ANALYSIS				Chromium Hex - 7196		NO2/NO3 - 353.2		Oil & Grease - 413.1		See item (1) in Special Instructions		Tritium - H3	
Sample No.		Matrix *		Sample Date		Sample Time							
B16W86		SOIL		5/5/3		0900		X		X		X	
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (+) Technetium-99; Strontium-89,90 = Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 Personnel not available to relinquish samples from the 3728 Ref # 1A on 5/16/03				S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WH=Wipe L=Liquid V=Vegetation X=Other	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
LABORATORY SECTION		Received By		Title				Date/Time					
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time					

LIONVILLE LABORATORY INCORPORATED SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hanford
Purchase Order/Project:

DATE: 5.7.03

AF# / SOW# / Release #: FO 3-006

Laboratory SDG #:

03054357

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | | | | |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets Lvl 1 Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

ECC-01-063 / 2.3"

Laboratory Sample Custodian:

Laboratory Project Manager:

[Signature]

Lionville Laboratory Use Only

Custody Transfer Record/Lab Work Request Page 1 of 1

Page 1 of 1

**FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS**

0305L366

[illegible]

BHI-EE-011 (03/01/2002)

LIONVILLE LABORATORY INCORPORATED

SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hartford

Purchase Order/Project:

DATE: 5-8-03

AF# / SOW# / Release #: F03-006

Laboratory SDG #:

0305L366

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | | | | |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets LVL Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

ERC 99-022 / 2.0°C

Laboratory Sample Custodian:

[Signature]

Laboratory Project Manager:

FH-Central Plateau Project				CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						F03-006-71		Page 1 of 1	
Collector Johansen/Popc/Pfister				Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling				Sampling Location 216-A-37 (C4106); (237.5'-240')		SAF No. F03-006				Air Quality <input type="checkbox"/>			
Ice Chest No. <u>ERC-01-040</u>				Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To <u>RELPA</u> EVERLINE SERVICES (Formerly TMA) <u>4/22/03</u>				Offsite Property No.				Bill of Lading/Air Bill No. <u>see OSPA</u>					
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None				
				Type of Container	aG	aG	aG	aG	aG				
				No. of Container(s)	1	1	1	1	1				
				Volume	120mL	60mL	120mL	60mL	60mL				
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions	Tritium - H3					
Sample No.	Matrix *	Sample Date	Sample Time										
B16W88	SOIL	5-7-03	1050	X	X	X							
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>***The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.</p> <p>(1) Technetium-99, Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; iodine-129; Nickel-63; Neptunium-237</p> <p>Personnel not available to relinquish samples from the 3728 Ref # 16 on 5/8/03</p>				<p>S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Dram Solids DL=Dram Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other</p>	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
LABORATORY SECTION		Received By		Title				Date/Time					
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time					

LIONVILLE LABORATORY INCORPORATED SAMPLE RECEIPT CHECKLIST

CLIENT: TNU HANFORD

Purchase Order/Project:

DATE: 5-9-03

SAF# / SOW# / Release #: F03-006

Laboratory SDG #: 03056372

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | | | | |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets LVLJ Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

1.5°
ERC 01-040

Laboratory Sample Custodian:

Carl H...

Laboratory Project Manager:

Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2195

RFW LOT # :0305L339

CLIENT ID	RFW #	MTX	PREP #	COLLECTN	DATE REC	EXT/PREP	ANALYSIS
B16W84	001	S	03LE0575	04/30/03	05/03/03	05/14/03	06/08/03
B16W85	002	S	03LE0575	04/30/03	05/03/03	05/14/03	06/08/03
B16W85	002 MS	S	03LE0575	04/30/03	05/03/03	05/14/03	06/09/03
B16W85	002 MSD	S	03LE0575	04/30/03	05/03/03	05/14/03	06/09/03

LAB QC:

SBLKTK	MB1	S	03LE0575	N/A	N/A	05/14/03	06/07/03
SBLKTK	MB1 BS	S	03LE0575	N/A	N/A	05/14/03	06/07/03



Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2195

DATE RECEIVED: 05/07/03

LVL LOT # :0305L357

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W86	001	S	03LE0575	05/05/03	05/14/03	06/09/03

LAB QC:

SBLKTK	MB1	S	03LE0575	N/A	05/14/03	06/07/03
SBLKTK	MB1 BS	S	03LE0575	N/A	05/14/03	06/07/03

Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2195

DATE RECEIVED: 05/08/03

LVL LOT # :0305L366

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W87	001	S	03LE0575	05/06/03	05/14/03	06/09/03

LAB QC:

SBLKTK	MB1	S	03LE0575	N/A	05/14/03	06/07/03
SBLKTK	MB1 BS	S	03LE0575	N/A	05/14/03	06/07/03

Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2195

DATE RECEIVED: 05/09/03

LVL LOT # :0305L372

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W88	001	SO	03LE0575	05/07/03	05/14/03	06/09/03

LAB QC:

SBLKTK	MB1	S	03LE0575	N/A	05/14/03	06/07/03
SBLKTK	MB1 BS	S	03LE0575	N/A	05/14/03	06/07/03



Client: TNU-HANFORD F03-006
LVL #: 0305L339, 0305L357,
0305L366, 0305L372

W.O. #: 11343-606-001-9999-00
Date Received: 05-03,07,08,09-2003
SDG/SAF # H2195/F03-006

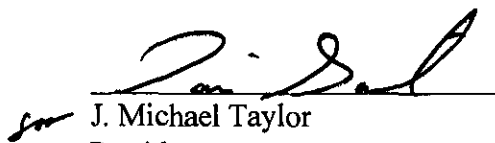
SEMIVOLATILE

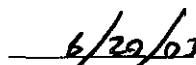
Five (5) soil/solid samples were collected on 04-30-2003 and 05-05,06,07-2003.

The samples and their associated QC samples were extracted according to Lionville Laboratory OPs based on method 3550 on 05-14-2003 and analyzed according to criteria set forth in Lionville Laboratory OPs based on SW 846 Method 8270C for client specified Semivolatile target compounds on 06-07,08,09-2003.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
2. Samples were extracted and analyzed within required holding time.
3. Non-target compounds were detected in the samples.
4. All surrogate recoveries were within EPA QC limits.
5. All matrix spike recoveries were within EPA QC limits.
6. All blank spike recoveries were within EPA QC limits.
7. Internal standard area and retention time criteria were met.
8. Manual integrations are performed according to OP 21-06A-125 to produce quality data with the utmost integrity. All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual Integration").
9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.


J. Michael Taylor
President
Lionville Laboratory Incorporated


Date

som\group\data\bna\tnu-hanford-0306-339,357,366,372.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 3 3 pages.

GLOSSARY OF BNA DATA

DATA QUALIFIERS

- U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.
- J = Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- D = Identifies all compounds identified in an analysis at a secondary dilution factor.
- I = Interference.
- NQ = Result qualitatively confirmed but not able to quantify.
- A = Indicates that a TIC is a suspected aldol-condensation product.
- N = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.
- X = This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).
- Y = Additional qualifiers used as required are explained in the case narrative.

GLOSSARY OF BNA DATA

ABBREVIATIONS

BS	=	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.
BSD	=	Indicates blank spike duplicate.
MS	=	Indicates matrix spike.
MSD	=	Indicates matrix spike duplicate.
DL	=	Suffix added to sample number to indicate that results are from a diluted analysis.
NA	=	Not Applicable.
DF	=	Dilution Factor.
NR	=	Not Required.
SP, Z	=	Indicates Spiked Compound.

TECHNICAL FLAGS FOR MANUAL INTEGRATION

Manual quantitation modifications or integrations are performed routinely to improve the data quality for a variety of technical reasons. Documentation of these modifications should be clear and concise. The following "flags" are used to indicate the technical reasons for quantitation modifications:

- MP - Missed Peak: manually added peak not found by automatic quantitation program.
- PA - Peak Assignment: quantitation report was changed to reflect correct peak assignment.
- RI - Routine Integration: routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the dichlorobenzene isomers on the VOA packed column and benzo(b)fluoranthene/benzo(k)fluoranthene which are poorly resolved on the BNA column.
- SP - Split Peak: the automatic integration improperly split the peak; a manual integration was performed to get the correct area.
- CB - Coelution/Background: peak was manually integrated to eliminate contribution from coeluting compounds, background signal, or other interference.
- PI - Proper Integration: a peak with poor or inconsistent integration (e.g., excessive tail) was properly integrated manually.

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, Special List

Report Date: 06/19/03 14:38

RFW Batch Number: 0305L339

Client: TNUHANFORD F03-006 H2195

Work Order: 11343606001

Page: 1a

5

Cust ID:		B16W84		B16W85		B16W85		B16W85		SBLKTK		SBLKTK BS	
Sample	RFW#:	001		002		002 MS		002 MSD		03LE0575-MB1		03LE0575-MB1	
Information	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	D.F.:	1.00		1.00		1.00		1.00		1.00		1.00	
	Units:	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
Surrogate Recovery	Nitrobenzene-d5	76	%	85	%	66	%	79	%	76	%	73	%
	2-Fluorobiphenyl	70	%	80	%	66	%	76	%	72	%	71	%
	Terphenyl-d14	91	%	106	%	87	%	93	%	86	%	92	%
	Phenol-d5	76	%	86	%	65	%	79	%	77	%	73	%
	2-Fluorophenol	67	%	75	%	59	%	72	%	66	%	66	%
	2,4,6-Tribromophenol	70	%	75	%	68	%	76	%	67	%	71	%
=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====													
	Phenol	360	U	360	U	62	%	76	%	330	U	70	%
	bis (2-Chloroethyl) ether	360	U	360	U	360	U	360	U	330	U	330	U
	2-Chlorophenol	360	U	360	U	56	%	67	%	330	U	65	%
	1,3-Dichlorobenzene	360	U	360	U	360	U	360	U	330	U	330	U
	1,4-Dichlorobenzene	360	U	360	U	58	%	68	%	330	U	66	%
	1,2-Dichlorobenzene	360	U	360	U	360	U	360	U	330	U	330	U
	2-Methylphenol	360	U	360	U	360	U	360	U	330	U	330	U
	2,2'-oxybis (1-Chloropropane)	360	U	360	U	360	U	360	U	330	U	330	U
	3- and/or 4-Methylphenol	360	U	360	U	360	U	360	U	330	U	330	U
	N-Nitroso-di-n-propylamine	360	U	360	U	61	%	73	%	330	U	69	%
	Hexachloroethane	360	U	360	U	360	U	360	U	330	U	330	U
	Nitrobenzene	360	U	360	U	360	U	360	U	330	U	330	U
	Isophorone	360	U	360	U	360	U	360	U	330	U	330	U
	2-Nitrophenol	360	U	360	U	360	U	360	U	330	U	330	U
	2,4-Dimethylphenol	360	U	360	U	360	U	360	U	330	U	330	U
	bis (2-Chloroethoxy) methane	360	U	360	U	360	U	360	U	330	U	330	U
	2,4-Dichlorophenol	360	U	360	U	360	U	360	U	330	U	330	U
	1,2,4-Trichlorobenzene	360	U	360	U	59	%	71	%	330	U	68	%
	Naphthalene	360	U	360	U	360	U	360	U	330	U	330	U
	4-Chloroaniline	360	U	360	U	360	U	360	U	330	U	330	U
	Hexachlorobutadiene	360	U	360	U	360	U	360	U	330	U	330	U
	4-Chloro-3-methylphenol	360	U	360	U	60	%	69	%	330	U	68	%
	2-Methylnaphthalene	360	U	360	U	670		360	U	330	U	330	U
	Hexachlorocyclopentadiene	360	U	360	U	360	U	360	U	330	U	330	U
	2,4,6-Trichlorophenol	360	U	360	U	360	U	360	U	330	U	330	U
	2,4,5-Trichlorophenol	910	U	900	U	900	U	900	U	830	U	830	U

* = Outside of EPA CLP QC limits.

	Cust ID:		B16W84	B16W85	B16W85	B16W85	SBLKTK	SBLKTK BS
RFW#:	001	002	002 MS	002 MSD	03LE0575-MB1	03LE0575-MB1		
2-Chloronaphthalene	360 U	360 U	360 U	360 U	330 U	330 U		
2-Nitroaniline	910 U	900 U	900 U	900 U	830 U	830 U		
Dimethylphthalate	360 U	360 U	360 U	360 U	330 U	330 U		
Acenaphthylene	360 U	360 U	360 U	360 U	330 U	330 U		
2,6-Dinitrotoluene	360 U	360 U	360 U	360 U	330 U	330 U		
3-Nitroaniline	910 U	900 U	900 U	900 U	830 U	830 U		
Acenaphthene	360 U	360 U	62 %	72 %	330 U	68 %		
2,4-Dinitrophenol	910 U	900 U	900 U	900 U	830 U	830 U		
4-Nitrophenol	910 U	900 U	52 %	64 %	830 U	79 %		
Dibenzofuran	360 U	360 U	360 U	360 U	330 U	330 U		
2,4-Dinitrotoluene	360 U	360 U	70 %	83 %	330 U	83 %		
Diethylphthalate	360 U	360 U	360 U	360 U	330 U	330 U		
4-Chlorophenyl-phenylether	360 U	360 U	360 U	360 U	330 U	330 U		
Fluorene	360 U	360 U	360 U	360 U	330 U	330 U		
4-Nitroaniline	910 U	900 U	900 U	900 U	830 U	830 U		
4,6-Dinitro-2-methylphenol	910 U	900 U	900 U	900 U	830 U	830 U		
N-Nitrosodiphenylamine (1)	360 U	360 U	360 U	360 U	330 U	330 U		
4-Bromophenyl-phenylether	360 U	360 U	360 U	360 U	330 U	330 U		
Hexachlorobenzene	360 U	360 U	360 U	360 U	330 U	330 U		
Pentachlorophenol	910 U	900 U	58 %	68 %	830 U	82 %		
Phenanthrene	360 U	360 U	360 U	360 U	330 U	330 U		
Anthracene	360 U	360 U	360 U	360 U	330 U	330 U		
Carbazole	360 U	360 U	360 U	360 U	330 U	330 U		
Di-n-butylphthalate	360 U	360 U	360 U	360 U	330 U	330 U		
Fluoranthene	360 U	360 U	360 U	360 U	330 U	330 U		
Pyrene	360 U	360 U	82 %	85 %	330 U	81 %		
Butylbenzylphthalate	360 U	360 U	360 U	360 U	330 U	330 U		
3,3'-Dichlorobenzidine	360 U	360 U	360 U	360 U	330 U	330 U		
Benzo(a)anthracene	360 U	360 U	360 U	360 U	330 U	330 U		
Chrysene	360 U	360 U	360 U	360 U	330 U	330 U		
bis(2-Ethylhexyl)phthalate	360 U	360 U	33 J	54 J	330 U	51 J		
Di-n-octyl phthalate	360 U	360 U	360 U	360 U	330 U	330 U		
Benzo(b)fluoranthene	360 U	360 U	360 U	360 U	330 U	330 U		
Benzo(k)fluoranthene	360 U	360 U	360 U	360 U	330 U	330 U		
Benzo(a)pyrene	360 U	360 U	360 U	360 U	330 U	330 U		
Indeno(1,2,3-cd)pyrene	360 U	360 U	360 U	360 U	330 U	330 U		
Dibenz(a,h)anthracene	360 U	360 U	360 U	360 U	330 U	330 U		
Benzo(g,h,i)perylene	360 U	360 U	360 U	360 U	330 U	330 U		
2-Butoxyethanol	360 U	360 U	360 U	360 U	330 U	330 U		
Benzyl alcohol	360 U	360 U	360 U	360 U	330 U	330 U		

*= Outside of EPA CLP QC limits.

RFW Batch Number: 0305L339

Client: TNUHANFORD F03-006 H2195

Work Order: 11343606001

Page: 1c

Cust ID:	B16W84	B16W85	B16W85	B16W85	SBLKTK	SBLKTK BS
RFW#:	001	002	002 MS	002 MSD	03LE0575-MB1	03LE0575-MB1

Tributylphosphate	360 U	360 U	360 U	360 U	330 U	330 U
-------------------	-------	-------	-------	-------	-------	-------

(1) - Cannot be separated from Diphenylamine. *= Outside of EPA CLP QC limits.

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, Special List

Report Date: 06/19/03 14:36

RFW Batch Number: 0305L339

Client: TNUHANFORD F03-006 H2195

Work Order: 11343606001

Page: 2a

		Cust ID: B16W86		B16W87		B16W88	
Sample		RFW#: 357-001		366-001		372-001	
Information		Matrix: SOIL		SOIL		SOLID	
		D.F.: 1.00		1.00		1.00	
		Units: UG/KG		UG/KG		UG/KG	
Surrogate Recovery	Nitrobenzene-d5	82	%	84	%	78	%
	2-Fluorobiphenyl	79	%	81	%	81	%
	Terphenyl-d14	104	%	110	%	97	%
	Phenol-d5	83	%	85	%	74	%
	2-Fluorophenol	72	%	73	%	53	%
	2,4,6-Tribromophenol	75	%	79	%	28	%
=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====							
	Phenol	340	U	340	U	340	U
	bis(2-Chloroethyl) ether	340	U	340	U	340	U
	2-Chlorophenol	340	U	340	U	340	U
	1,3-Dichlorobenzene	340	U	340	U	340	U
	1,4-Dichlorobenzene	340	U	340	U	340	U
	1,2-Dichlorobenzene	340	U	340	U	340	U
	2-Methylphenol	340	U	340	U	340	U
	2,2'-oxybis(1-Chloropropane)	340	U	340	U	340	U
	3- and/or 4-Methylphenol	340	U	340	U	340	U
	N-Nitroso-di-n-propylamine	340	U	340	U	340	U
	Hexachloroethane	340	U	340	U	340	U
	Nitrobenzene	340	U	340	U	340	U
	Isophorone	340	U	340	U	340	U
	2-Nitrophenol	340	U	340	U	340	U
	2,4-Dimethylphenol	340	U	340	U	340	U
	bis(2-Chloroethoxy)methane	340	U	340	U	340	U
	2,4-Dichlorophenol	340	U	340	U	340	U
	1,2,4-Trichlorobenzene	340	U	340	U	340	U
	Naphthalene	340	U	340	U	340	U
	4-Chloroaniline	340	U	340	U	340	U
	Hexachlorobutadiene	340	U	340	U	340	U
	4-Chloro-3-methylphenol	340	U	340	U	340	U
	2-Methylnaphthalene	340	U	340	U	340	U
	Hexachlorocyclopentadiene	340	U	340	U	340	U
	2,4,6-Trichlorophenol	340	U	340	U	340	U
	2,4,5-Trichlorophenol	860	U	860	U	840	U

*= Outside of EPA CLP QC limits.

Cust ID:

B16W86

B16W87

B16W88

RFW#: 357-001

366-001

372-001

2-Chloronaphthalene	340	U	340	U	340	U
2-Nitroaniline	860	U	860	U	840	U
Dimethylphthalate	340	U	340	U	340	U
Acenaphthylene	340	U	340	U	340	U
2,6-Dinitrotoluene	340	U	340	U	340	U
3-Nitroaniline	860	U	860	U	840	U
Acenaphthene	340	U	340	U	340	U
2,4-Dinitrophenol	860	U	860	U	840	U
4-Nitrophenol	860	U	860	U	840	U
Dibenzofuran	340	U	340	U	340	U
2,4-Dinitrotoluene	340	U	340	U	340	U
Diethylphthalate	340	U	340	U	340	U
4-Chlorophenyl-phenylether	340	U	340	U	340	U
Fluorene	340	U	340	U	340	U
4-Nitroaniline	860	U	860	U	840	U
4,6-Dinitro-2-methylphenol	860	U	860	U	840	U
N-Nitrosodiphenylamine (1)	340	U	340	U	340	U
4-Bromophenyl-phenylether	340	U	340	U	340	U
Hexachlorobenzene	340	U	340	U	340	U
Pentachlorophenol	860	U	860	U	840	U
Phenanthrene	340	U	340	U	340	U
Anthracene	340	U	340	U	340	U
Carbazole	340	U	340	U	340	U
Di-n-butylphthalate	340	U	340	U	340	U
Fluoranthene	340	U	340	U	340	U
Pyrene	340	U	340	U	340	U
Butylbenzylphthalate	340	U	340	U	340	U
3,3'-Dichlorobenzidine	340	U	340	U	340	U
Benzo(a)anthracene	340	U	340	U	340	U
Chrysene	340	U	340	U	340	U
bis(2-Ethylhexyl)phthalate	340	U	18	J	47	J
Di-n-octyl phthalate	340	U	340	U	340	U
Benzo(b)fluoranthene	340	U	340	U	340	U
Benzo(k)fluoranthene	340	U	340	U	340	U
Benzo(a)pyrene	340	U	340	U	340	U
Indeno(1,2,3-cd)pyrene	340	U	340	U	340	U
Dibenz(a,h)anthracene	340	U	340	U	340	U
Benzo(g,h,i)perylene	340	U	340	U	340	U
2-Butoxyethanol	340	U	340	U	340	U
Benzyl alcohol	340	U	340	U	340	U

*= Outside of EPA CLP QC limits.

Cust ID:

B16W86

B16W87

B16W88

RFW#: 357-001

366-001

372-001

Tributylphosphate

340 U

340 U

340 U

(1) - Cannot be separated from Diphenylamine. *= Outside of EPA CLP QC limits.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B16W84

Lab Name: Lionville Labs, Inc. Work Order: 11343606001Client: TNUHANFORD F03-006 H2195Matrix: (soil/water) SOILLab Sample ID: 0305L339-001Sample wt/vol: 30.0 (g/mL) GLab File ID: D060819Level: (low/med) LOWDate Received: 05/03/03% Moisture: 8 decanted: (Y/N) Date Extracted: 05/14/03Concentrated Extract Volume: 1000 (uL)Date Analyzed: 06/08/03Injection Volume: 2.0 (uL)Dilution Factor: 1.00GPC Cleanup: (Y/N) NpH: 7.0

CONCENTRATION UNITS:

Number TICs found: 3(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	3.178	2000	J
2.	ALDOL CONDENSATE	3.552	200	JAB
3.	ALDOL CONDENSATE	4.126	20000	JAB

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B16W85

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD F03-006 H2195

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L339-002

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: D060823

Level: (low/med) LOW

Date Received: 05/03/03

% Moisture: 7 decanted: (Y/N)

Date Extracted: 05/14/03

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 06/08/03

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	3.182	100	J
2.	ALDOL CONDENSATE	3.529	200	JAB
3.	ALDOL CONDENSATE	4.112	20000	JAB

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B16W86

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD F03-006 H2195

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L357-001

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: D060826

Level: (low/med) LOW

Date Received: 05/07/03

% Moisture: 3 decanted: (Y/N) __

Date Extracted: 05/14/03

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 06/09/03

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	3.184	100	J
2.	ALDOL CONDENSATE	3.549	200	JAB
3.	ALDOL CONDENSATE	4.131	30000	JAB

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B16W87

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD F03-006 H2195

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L366-001

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: D060827

Level: (low/med) LOW

Date Received: 05/08/03

% Moisture: 3 decanted: (Y/N)

Date Extracted: 05/14/03

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 06/09/03

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	3.183	100	J
2.	ALDOL CONDENSATE	3.557	300	JAB
3.	ALDOL CONDENSATE	4.140	30000	JAB

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B16W88

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD F03-006 H2195

Matrix: (soil/water) SOLID

Lab Sample ID: 0305L372-001

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: D060828

Level: (low/med) LOW

Date Received: 05/09/03

% Moisture: 1 decanted: (Y/N)

Date Extracted: 05/14/03

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 06/09/03

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

Number TICs found: 7

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	3.196	300	J
2.	ALDOL CONDENSATE	3.561	300	JAB
3.	ALDOL CONDENSATE	4.135	30000	JAB
4.	ALDOL CONDENSATE	5.300	100	JA
5.	UNKNOWN	11.003	90	J
6.	ALKANE	22.810	100	J
7.	UNKNOWN	22.897	300	J

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKTK

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD F03-006 H2195

Matrix: (soil/water) SOIL

Lab Sample ID: 03LE0575-MB1

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: D060718

Level: (low/med) LOW

Date Received: 05/14/03

% Moisture: _____ decanted: (Y/N) _____

Date Extracted: 05/14/03

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 06/07/03

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS:

Number TICs found: 3

(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====
1.	ALDOL CONDENSATE	3.543	200	JA
2.	ALDOL CONDENSATE	4.125	20000	JA
3.	UNKNOWN	21.471	80	J

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS[illegible]

FH-Central Plateau Project			CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST								
Collector Johansen/Pope/Pfister			Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N	Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling			Sampling Location 216-A-37 (C4106); (72.5'-75')		SAF No. F03-006		Air Quality <input type="checkbox"/>				
Ice Chest No. ERC-01-038			Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express				
Shipped To RECLA ESERLINE SERVICES (Formerly TMA) 4/12/03			Offsite Property No. R030221		Bill of Lading/Air Bill No. SEE OSA						
POSSIBLE SAMPLE HAZARDS/REMARKS Radioactive Tie To B16WDO Special Handling and/or Storage COO 140L			Preservation	Cool 4C	Cool 4C	Cool 4C	None	None			
			Type of Container	aG	aG	aG	aG	aG			
			No. of Container(s)	1	1	1	1	1			
			Volume	120mL	60mL	120mL	60mL	60mL			
SAMPLE ANALYSIS			Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions.	Tritium - H3				
Sample No.	Matrix *	Sample Date	Sample Time								
B16W84	SOIL	4-30-03	1900	X	X	X				B16WDO	
CHAIN OF POSSESSION				Sign/Print Names		SPECIAL INSTRUCTIONS				Matrix *	
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time	** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (1) Technetium-99, Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 4/22/03				S=Soil SE=Soil SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other	
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time						
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time						
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time						
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time						
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time						
LABORATORY SECTION		Received By		Title		Date/Time					
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time					

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-68		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N	Data Turnaround 45 Days
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (97.5'-100')		SAF No. F03-006		Air Quality <input type="checkbox"/>			
Ice Chest No. ERC 01-028		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express			
Shipped To RECEIVED EBERLINE SERVICES (Formerly TMA)		Offsite Property No. A030 221		Bill of Lading/Air Bill No. SEF OSPC					
POSSIBLE SAMPLE HAZARDS/REMARKS Radioactive Tre to B16WPI Special Handling and/or Storage COOL 40C				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None
				Type of Container	aG	aG	aG	aG	aG
				No. of Container(s)	1	1	1	1	1
				Volume	120mL	60mL	120mL	60mL	60mL
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) for Special Instructions	Tridium - H3	
Sample No.	Matrix *	Sample Date	Sample Time						
B16W85	SOIL	4-30-03	1238	X	X	X			B16W01
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		** The laboratory is to achieve a detection limit of 30.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (1) Technetium-99, Strontium-89,90 - Total Sr; Isotopic Thorium [Thorium-232]; Carbon-14; Iodine-129; Nickel-63; Neptunium-237 4/22/03 952	
Matthew Johnson		4/20/03 1430		R. G. G. R. G. G.		4-30-03 1430			
4. G. G. R. G. G.		4-30-03 1430		1B 3728		4-30-03 1430			
1B 3728		5-2-03 1000		R. G. G. R. G. G.		5-2-03 1000			
R. G. G. R. G. G.		5-2-03 1000		R. G. G. R. G. G.		5-2-03 1000			
4. G. G. R. G. G.		5-3-03 11:00		4. G. G. R. G. G.		5-3-03 11:00			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
LABORATORY SECTION		Received By		Title		Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time			

LIONVILLE LABORATORY INCORPORATED

SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hanford

Purchase Order/Project:

DATE: 5-3-03

AF# / SOW# / Release #: F03-006

Laboratory SDG #:

0305L339

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | | | | |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets Lvl1 Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

Exc 01-038 / 0.6°

Laboratory Sample Custodian:

Laboratory Project Manager:

D. Smith

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

[illegible]

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-69		Page 1 of 1			
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days		
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (147.5'-150')				SAF No. F03-006		Air Quality <input type="checkbox"/>				
Ice Chest No. <i>ERC 01-063</i>		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express				26		
Shipped To <i>KECRA 18M</i> EBERLINE SERVICES (Pompano Beach) <i>4/22/03</i>		Offsite Property No. <i>A030 222</i>				Bill of Lading/Air Bill No. <i>SEE OSPL</i>						
POSSIBLE SAMPLE HAZARDS/REMARKS <i>Radiation</i> <i>Tie To B16 WDO</i> Special Handling and/or Storage <i>cool yoc</i>				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None			
				Type of Container	aG	aG	aG	aG	aG			
				No. of Container(s)	1	1	1	1	1			
				Volume	120mL	60mL	120mL	60mL	60mL			
					Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions	Tridium - H3			
SAMPLE ANALYSIS												
Sample No.	Matrix *	Sample Date	Sample Time									
B16W86	SOIL	5/5/3	0900	X	X	X					<i>Tie To:</i> B16W86 <i>B16WDS</i>	
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (+) Technetium-99; Strontium-89,90 = Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 Personnel not available to relinquish samples from the 3728 Ref # <i>1A</i> on <i>5 16 103</i>				
<i>Manhasset Neck</i>		<i>5/5/03 1315</i>		<i>REF 1A</i>		<i>5-5-03 1315</i>						
<i>1A 3728</i>		<i>5-6-03 1000</i>		<i>R. F. Hulstrom</i>		<i>5-6-03</i>						
<i>R. F. Hulstrom</i>		<i>5-6-03</i>		<i>R. F. Hulstrom</i>		<i>5-6-03</i>						
<i>Geo. E.</i>		<i>5-7-03 10:10</i>		<i>D. Hulstrom</i>		<i>5-7-03 10:10</i>						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Matrix * S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WL=Wipe L=Liquid V=Vegetation X=Other				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
LABORATORY SECTION		Received By		Title				Date/Time				
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time				

LIONVILLE LABORATORY INCORPORATED SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hanford

Purchase Order/Project:

DATE: 5.7.03

AF# / SOW# / Release #: F03-006

Laboratory SDG#:

0305L357

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | | | | |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets LVL Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

ECC-01-063 / 2.3"

Laboratory Sample Custodian:

Laboratory Project Manager:

[Signature]

0305L346

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client TNU-Hamford F03-006					
Est. Final Proj. Sampling Date					
Project # 11343-606.001-9999-00					
Project Contact/Phone #					
Lionville Laboratory Project Manager Delette Johnson					
QC SPEC Del STD TAT 30 days					
Date Rec'd 5-8-03 Date Due 6-7-03					
Refrigerator #					
#/Type Container Liquid Solid					
Volume Liquid Solid					
Preservatives					
ANALYSES REQUESTED ORGANIC INORG Metal CN					
MATRIX CODES: S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air DS - Drum Solids DL - Drum Liquids L - EP/TCLP Leachate WI - Wipe X - Other F - Fish					
Lab ID Client ID/Description Matrix QC Chosen MS MSD Matrix Date Collected Time Collected					
001 BILLOWBRT S 5-6-03 0945					
Special Instructions: SAF # F03-006 Batch QC for L339,357,366,372					
DATE/REVISIONS: 5-14-03 1. Per Chemist Due Date: 6-16-03 2. Add: Ag, Al, Ba, Be, Bi, Cd, Cr, Cu, Hg, Ni, Pb, Sb, Se / EC: Cl, F, NO3, NO2, P, O4, SO4 3. INHIN, I PH, 0624 H, 0625 X, 06CSC, OPCB 4. ODRW, OGRO 5. 6.					
Lionville Laboratory Use Only Samples were: 1) Shipped or Hand Delivered Airbill # 790774259278 2) Ambient or Preserved 3) Received in Good Condition 4) Samples Properly Preserved 5) Received Within Holding Times					
TAMPER RESISTANT SEAL was 1) Present on Outer Package 2) Unbroken on Outer Package 3) Present on Sample 4) Unbroken on Sample COC Record Present Upon Sample Rec't Cooler Temp. 2.0 °C					
Relinquished by Received by Date Time Relinquished by Received by Date Time Discrepancies Between Samples Labels and COC Record? Y or N NOTES:					
ORIGINAL REWRITTEN COMPOSITE WASTE					

LIONVILLE LABORATORY INCORPORATED

SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hartford

Purchase Order/Project:

DATE: 5-8-03

AF# / SOW# / Release #: FD3-006

Laboratory SDG #:

0305L366

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | | | | |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets LVLJ Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

ERC 99-022 / 2.0°

Laboratory Sample Custodian:

Laboratory Project Manager:

[Signature]

03054 372

Custody Transfer Record/Lab Work Request Page 1 of 1

Page 1 of 1

**FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS**[illegible]

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-71		Page 1 of 1		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days ^c	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (237.5'-240')		SAF No. F03-006		Air Quality <input type="checkbox"/>					
Ice Chest No. ERC-01-040		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express		CJ 09			
Shipped To RECLA BERLINE SERVICES (Formerly TMA) 4/22/03		Offsite Property No.		Bill of Lading/Air Bill No. See OSPA							
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container	aG	aG	aG	aG	aG		
				No. of Container(s)	1	1	1	1	1		
				Volume	120mL	60mL	120mL	60mL	60mL		
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions.	Tritium - H3			
							TILTD:				
Sample No.	Matrix *	Sample Date	Sample Time								
B16W88	SOIL	5-7-03	1050	X	X	X				B16W88	
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS			
Relinquished By/Removed From <i>M. Hulstrom</i>		Date/Time 5/7/03 1440		Received By/Stored In <i>SJOACE</i>		Date/Time 5/7/03 1440		** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (1) Technetium-99, Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; iodine-129; Nickel-63; Neptunium-237 Personnel not available to relinquish samples from the 3728 Ref # 18 on 5/8/03 752 4/22/03			
Relinquished By/Removed From <i>SJOACE</i>		Date/Time 5/7/03 1440		Received By/Stored In <i>REF 18</i>		Date/Time 5/7/03 1440					
Relinquished By/Removed From <i>3728 REF 18</i>		Date/Time 5/8/03 0830		Received By/Stored In <i>REF 18</i>		Date/Time 5/8/03 0830					
Relinquished By/Removed From <i>REF 18</i>		Date/Time 5/8/03 0830		Received By/Stored In <i>FEDEX</i>		Date/Time 5/9-03 0930					
Relinquished By/Removed From <i>FEDEX</i>		Date/Time 5-9-03 0930		Received By/Stored In <i>FEDEX</i>		Date/Time 5-9-03 0930					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Matrix *			
								S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Dry Solids DL=Dry Liquids T=Tissue W=Wipe L=Liquid V=Vegetation X=Other			
LABORATORY SECTION		Received By		Title				Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time			

LIONVILLE LABORATORY INCORPORATED

SAMPLE RECEIPT CHECKLIST

Client: TNU HANFORD

Purchase Order/Project:

DATE: 5-9-03

LF# / SOW# / Release #: F03-006

Laboratory SDG #: 03052372

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | | | | |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets LVL1 Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

1.5°
ERC 01 -040

Laboratory Sample Custodian:

Carl H...

Laboratory Project Manager:

Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2195

DATE RECEIVED: 05/03/03

LVL LOT # :0305L339

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W84	001	S	03LE0576	04/30/03	05/14/03	05/21/03
B16W85	002	S	03LE0576	04/30/03	05/14/03	05/21/03

LAB QC:

PBLKTS	MB1	S	03LE0576	N/A	05/14/03	05/22/03
PBLKTS	MB1 BS	S	03LE0576	N/A	05/14/03	05/22/03

Handwritten signature and date: 6/17/03



Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2195

DATE RECEIVED: 05/07/03

LVL LOT # :0305L357

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W86	001	S	03LE0576	05/05/03	05/14/03	05/22/03
B16W86	001 MS	S	03LE0576	05/05/03	05/14/03	05/22/03
B16W86	001 MSD	S	03LE0576	05/05/03	05/14/03	05/22/03

LAB QC:

PBLKTS	MB1	S	03LE0576	N/A	05/14/03	05/22/03
PBLKTS	MB1 BS	S	03LE0576	N/A	05/14/03	05/22/03

Handwritten signature/initials

Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2195

DATE RECEIVED: 05/08/03

LVL LOT # :0305L366

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W87	001	S	03LE0576	05/06/03	05/14/03	05/22/03

LAB QC:

PBLKTS	MB1	S	03LE0576	N/A	05/14/03	05/22/03
PBLKTS	MB1 BS	S	03LE0576	N/A	05/14/03	05/22/03

9/8/06/17/13

Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2195

DATE RECEIVED: 05/09/03

LVL LOT # :0305L372

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W88	001	SO	03LE0576	05/07/03	05/14/03	05/22/03

LAB QC:

PBLKTS	MB1	S	03LE0576	N/A	05/14/03	05/22/03
PBLKTS	MB1 BS	S	03LE0576	N/A	05/14/03	05/22/03

gga 6/17/03



Analytical Report

Client: TNU-HANFORD F03-006
LVL #: 0305L339, 0305L357,
0305L366, 0305L372

W.O. #: 11343-606-001-9999-00
Date Received: 05-03,07,08,09-2003
SDG/SAF # H2195/F03-006

PCB

Five (5) soil/solid samples were collected on 04-30-2003 and 05-05,06,07-2003.

The samples and their associated QC samples were extracted on 05-14-2003 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 05-21,22-2003. The extraction procedure was based on method 3540 and the extracts were analyzed based on method 8082 for Aroclors only.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
2. The required holding time for extraction and analysis was met.
3. Samples and their associated QC samples received a Sulfuric Acid and Sulfur cleanup.
4. The method blank was below the reporting limits for all target compounds.
5. All surrogate recoveries were within acceptance criteria.
6. The blank spike recoveries were within acceptance criteria.
7. All matrix spike recoveries were within acceptance criteria.
8. All initial calibrations associated with this data set were within acceptance criteria.
9. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.


Iain Daniels

Laboratory Manager

Lionville Laboratory Incorporated


Date

son\tr\group\data\pest\tnu hanford\0305-339,357,366,372.pcb

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 2 4 pages.



GLOSSARY OF PESTICIDE/PCB DATA

DATA QUALIFIERS

- U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I = Interference.

ABBREVIATIONS

- BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD = Indicates blank spike duplicate.
- MS = Indicates matrix spike.
- MSD = Indicates matrix spike duplicate.
- DL = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA = Not Applicable.
- DF = Dilution Factor.
- NR = Not Required.
- SP = Indicates Spiked Compound.



GLOSSARY OF PESTICIDE/PCB DATA

- P** = This flag is used for an PESTICIDE/PCB target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- D** = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C** = This flag applies to a compound that has been confirmed by GC/MS.

Report Date: 06/17/03 15:49

Client: **TNUHANFORD F03-006 H2195** Work Order: 11343606001 Page: 1

8

	Cust ID:	B16W84	B16W85	PBLKTS	PBLKTS BS
Sample Information	RFW#:	001	002	03LE0576-MB1	03LE0576-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG

Surrogate:	Decachlorobiphenyl	80 %	100 %	105 %	100 %
	Tetrachloro-m-xylene	90 %	80 %	85 %	85 %
-----fl-----fl-----fl-----fl-----fl-----fl-----fl-----fl					
Aroclor-1016		16 U	16 U	15 U	92 %
Aroclor-1221		16 U	16 U	15 U	15 U
Aroclor-1232		16 U	16 U	15 U	15 U
Aroclor-1242		16 U	16 U	15 U	15 U
Aroclor-1248		16 U	16 U	15 U	15 U
Aroclor-1254		16 U	16 U	15 U	15 U
Aroclor-1260		16 U	16 U	15 U	94 %

7/26/73

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

PCBs by GC

RFW Batch Number: 0305L357

Client: **TNUHANFORD F03-006 H2195** Work Order: 11343606001 Page: 1

	Cust ID:	B16W86	B16W86	B16W86	PBLKTS	PBLKTS BS
Sample Information	RFW#:	001	001 MS	001 MSD	03LE0576-MB1	03LE0576-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG

[illegible]

7/1/53

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

Report Date: 06/17/03 15:50

RFW Batch Number: 0305L366

Client: TNUHANFORD F03-006 H2195 Work Order: 11343606001 Page: 1

Report Date: 06/17/03 15:50

10

Cust ID: B16W87 PBLKTS PBLKTS BS

Sample Information	RFW#:	001	03LE0576-MB1	03LE0576-MB1
	Matrix:	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG

Surrogate:	Decachlorobiphenyl	110	%	105	%	100	%
	Tetrachloro-m-xylene	95	%	85	%	85	%
=====	=====	fl	=====	fl	=====	fl	=====
Aroclor-1016		15	U	15	U	92	%
Aroclor-1221		15	U	15	U	15	U
Aroclor-1232		15	U	15	U	15	U
Aroclor-1242		15	U	15	U	15	U
Aroclor-1248		15	U	15	U	15	U
Aroclor-1254		15	U	15	U	15	U
Aroclor-1260		15	U	15	U	94	%

7/8/6/17/53

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

RFW Batch Number: 0305L372

Client: **TNUHANFORD F03-006 H2195** Work Order: 11343606001 Page: 1

11

	Cust ID:	B16W88	PBLKTS	PBLKTS BS
Sample Information	RFW#:	001	03LE0576-MB1	03LE0576-MB1
	Matrix:	SOLID	SOIL	SOIL
	D.F.:	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG

Surrogate:	Decachlorobiphenyl	105	%	105	%	100	%
	Tetrachloro-m-xylene	85	%	85	%	85	%
=====	fl	=====	fl	=====	fl	=====	fl
Aroclor-1016	15 U	15	U	92	%		
Aroclor-1221	15 U	15	U	15	U		
Aroclor-1232	15 U	15	U	15	U		
Aroclor-1242	15 U	15	U	15	U		
Aroclor-1248	15 U	15	U	15	U		
Aroclor-1254	15 U	15	U	15	U		
Aroclor-1260	15 U	15	U	94	%		

7/26/53

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.
 %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

0305L339

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS[illegible]

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-68		Page 1 of 1		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (97.5'-100')		SAF No. F03-006		Air Quality <input type="checkbox"/>					
Ice Chest No. ERC 01-028		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To RECEIVED EBERLINE SERVICES (Formerly TMA) 4/22/03		Offsite Property No. A030 221		Bill of Lading/Air Bill No. SEE OSPC							
POSSIBLE SAMPLE HAZARDS/REMARKS Radioactive TrISO B16WPI Special Handling and/or Storage COOL 40C				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container	aG	aG	aG	aG	aG		
				No. of Container(s)	1	1	1	1	1		
				Volume	120mL	60mL	120mL	60mL	60mL		
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions	Tridium - H3			
								T10 TO:			
Sample No.	Matrix *	Sample Date	Sample Time								
B16W85	SOIL	4-30-03	1238	X	X	X				B16WPI	
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS 982 4/22/03 ** The laboratory is to achieve a detection limit of 50.0 PCU/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (1) Technetium-99, Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 4/22/03 982			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
M. J. Hulstrom		4/20/03 1430		R. C. Hulstrom		4-30-03 1430					
A. C. Hulstrom		4-30-03 1430		IB 3728		4-30-03					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
IB 3728		5-2-03 1000		R. C. Hulstrom		5-2-03					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Matrix * S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Time WT=Wipe L=Liquid V=Vegetation X=Other			
R. C. Hulstrom		5-2-03 1000		R. C. Hulstrom		5-2-03					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
A. C. Hulstrom		5-3-03 11:00		R. C. Hulstrom		5-3-03 11:00					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
A. C. Hulstrom		5-3-03 11:00		R. C. Hulstrom		5-3-03 11:00					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
A. C. Hulstrom		5-3-03 11:00		R. C. Hulstrom		5-3-03 11:00					
LABORATORY SECTION		Received By		Title				Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time			

LIONVILLE LABORATORY INCORPORATED

SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hartford

Purchase Order/Project:

DATE: 5-3-03

AF# / SOW# / Release #: F03-006

Laboratory SDG #:

0305L339

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | | | | |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets LVLJ Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

ERC 01-038 / 0.6 °C

Laboratory Sample Custodian:

Laboratory Project Manager:

[Signature]

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

[illegible]

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-69		Page 1 of 1			
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days		
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (147.5'-150')		SAF No. F03-006		Air Quality <input type="checkbox"/>						
Ice Chest No. <i>ERC 01-063</i>		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express						
Shipped To <i>REIRA 18m</i> EBERLINE SERVICES (Formerly TMA) <i>4/22/03</i>		Offsite Property No. <i>A030 222</i>		Bill of Lading/Air Bill No. <i>SEE OSPL</i>								
POSSIBLE SAMPLE HAZARDS/REMARKS <i>Radiation</i> <i>Tie To B16 WDO</i> Special Handling and/or Storage <i>cool 4°C</i>				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None			
				Type of Container	aG	aG	aG	aG	aG			
				No. of Container(s)	1	1	1	1	1			
				Volume	120mL	60mL	120mL	60mL	60mL			
					Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions	Tritium - H3			
SAMPLE ANALYSIS												
Sample No.	Matrix *	Sample Date	Sample Time									
B16W86	SOIL	5/5/3	0900	X	X	X					<i>Tie To: B16 WDO</i>	
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (+) Technetium-99; Strontium-89,90 - Total Sr; Isotope Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 Personnel not available to relinquish samples from the 3728 Ref # 1A on 5/6/03				
<i>Thompson/Reynolds</i>		<i>5/5/03 1315</i>		<i>REF 1A</i>		<i>5-5-03 1315</i>						
<i>1A 3728</i>		<i>5-6-03 1000</i>		<i>R. F. Hulstrom</i>		<i>5-6-03</i>						
<i>R. F. Hulstrom</i>		<i>5-6-03</i>		<i>FedEx</i>								
<i>5-7-03 10:10</i>		<i>5-7-03 10:10</i>										
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
LABORATORY SECTION		Received By		Title		Date/Time						
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time						

LIONVILLE LABORATORY INCORPORATED

SAMPLE RECEIPT CHECKLIST

Client: TNU Hanford

Purchase Order/Project:

DATE: 5.7.03

AFW/SOW# / Release #: FO3-006

Laboratory SDG #:

0305L357

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | | | | |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets LVLJ Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

ERC-01-063 / 2.3"

Laboratory Sample Custodian:

[Signature]

Laboratory Project Manager:

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS[illegible]

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-70		Page 1 of 1				
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days			
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (197.5'-200')				SAF No. F03-006		Air Quality <input type="checkbox"/>					
Ice Chest No. ERC 99.022		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express							
Shipped To BERLINE SERVICES (Formerly TMA) 4/24/03		Offsite Property No. A030 223				Bill of Lading/Air Bill No. SEE BPC							
POSSIBLE SAMPLE HAZARDS/REMARKS Radioactive Tie To B16WDO Special Handling and/or Storage cool 4°C				Preservation		Cool 4C	Cool 4C	Cool 4C	None	None			
				Type of Container		aG	aG	aG	aG	aG			
				No. of Container(s)		1	1	1	1	1			
				Volume		120mL	60mL	120mL	60mL	60mL			
SAMPLE ANALYSIS				Chromium Hex - 7196		NO2/NO3 - 353.2		Oil & Grease - 413.1		See item (1) in Special Instructions		Tritium - H3	
Sample No.		Matrix *		Sample Date		Sample Time							
B16W87		SOIL		5/6/03		0945		X		X		X	
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		** The laboratory is to achieve a detection limit of 30.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (1) Technetium-99; Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 Personnel not available to relinquish samples from the 3728 Ref #1A on 5/17/03				S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other	
mohansen/pope 5/6/03 1000		REF 1A 3728 5/6/03 1100											
1A 3728 5-7-03 1000		R. Hulstrom 5-7-03											
R. Hulstrom 5-7-03		R. Hulstrom											
R. Hulstrom 5-8-03 10:00		R. Hulstrom 5-8-03 10:00											
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
LABORATORY SECTION		Received By		Title				Date/Time					
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time					

LIONVILLE LABORATORY INCORPORATED SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hamford

Purchase Order/Project:

DATE: 5.8.03

AF# / SOW# / Release #: F03-006

Laboratory SDG#:

0305L366

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | | | | |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets LVLJ Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

ERC 99-022 / 2.0°C

Laboratory Sample Custodian:

[Signature]

Laboratory Project Manager:

A B C

7915 8912 8567

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						F03-006-71		Page 1 of 1	
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (237.5'-240')				SAF No. F03-006		Air Quality <input type="checkbox"/>			
Ice Chest No. ERC-01-040		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To RELLA EBERLINE SERVICES (Formerly TMA) 4/22/03		Offsite Property No.				Bill of Lading/Air Bill No. see OSA					
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container	aG	aG	aG	aG	aG		
				No. of Container(s)	1	1	1	1	1		
				Volume	120mL	60mL	120mL	60mL	60mL		
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions	Tritium - H3			
Sample No.	Matrix *	Sample Date	Sample Time								
B16W88	SOIL	5-7-03	1050	X	X	X					
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS			
Relinquished By/Removed From M. Hulstrom		Date/Time 5/7/03 1440		Received By/Stored In SJOALE		Date/Time 5/7/03 1440		<p>Personnel not available to relinquish samples from the 3728 Ref # 16 on 5/18/03</p> <p>(1) Technetium-99, Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; iodine-129; Nickel-63; Neptunium-237</p> <p>Matrix * S=Soil SE=Sediment SO=Solid SI=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other</p>			
Relinquished By/Removed From SJOALE		Date/Time 5/7/03 1440		Received By/Stored In REF 1B 3728		Date/Time 5/7/03 1440					
Relinquished By/Removed From 3728 REF 1B		Date/Time 5/8/03 0830		Received By/Stored In FEDEX		Date/Time 5/8/03 0830					
Relinquished By/Removed From FEDEX		Date/Time 5-9-03 0930		Received By/Stored In Carl Hing		Date/Time 5-9-03 0930					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
LABORATORY SECTION		Received By		Title				Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time			

LIONVILLE LABORATORY INCORPORATED

SAMPLE RECEIPT CHECKLIST

Client: TNU HANFORD

Purchase Order/Project:

DATE: 5-9-03

FF# / SOW# / Release #: F-03-006

Laboratory SDG #: 03056372

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | | | | |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets LVL Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

1.5°
ERC 01 -040

Laboratory Sample Custodian:

Carl H...

Laboratory Project Manager:

Lionville Laboratory, Inc.
GCSC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2195

DATE RECEIVED: 05/03/03

LVL LOT # :0305L339

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W84	001	S	03LE0578	04/30/03	05/14/03	05/14/03
B16W85	002	S	03LE0578	04/30/03	05/14/03	05/14/03

LAB QC:

BLK	MB1	S	03LE0578	N/A	05/14/03	05/14/03
BLK	MB1 BS	S	03LE0578	N/A	05/14/03	05/14/03



gale/16/03

Lionville Laboratory, Inc.
GCSC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2195

DATE RECEIVED: 05/07/03

LVL LOT # :0305L357

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W86	001	S	03LE0578	05/05/03	05/14/03	05/14/03

LAB QC:

BLK	MB1	S	03LE0578	N/A	05/14/03	05/14/03
BLK	MB1 BS	S	03LE0578	N/A	05/14/03	05/14/03

Rec'd 11/13

Lionville Laboratory, Inc.
GCSC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2195

DATE RECEIVED: 05/08/03

LVL LOT # :0305L366

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W87	001	S	03LE0578	05/06/03	05/14/03	05/14/03
B16W87	001 MS	S	03LE0578	05/06/03	05/14/03	05/14/03
B16W87	001 MSD	S	03LE0578	05/06/03	05/14/03	05/14/03

LAB QC:

BLK	MB1	S	03LE0578	N/A	05/14/03	05/14/03
BLK	MB1 BS	S	03LE0578	N/A	05/14/03	05/14/03

Handwritten signature

Lionville Laboratory, Inc.
GCSC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2195

DATE RECEIVED: 05/09/03

LVL LOT # :0305L372

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W88	001	SO	03LE0578	05/07/03	05/14/03	05/14/03

LAB QC:

BLK	MB1	S	03LE0578	N/A	05/14/03	05/14/03
BLK	MB1 BS	S	03LE0578	N/A	05/14/03	05/14/03

78 Juc/16/03



Analytical Report

Client: TNU-HANFORD F03-006
LVL #: 0305L339, 0305L357,
0305L366, 0305L372

W.O. #: 11343-606-001-9999-00
Date Received: 05-03,07,08,09-2003
SDG/SAF # H2195/F03-006

GC SCAN

Five (5) soil/solid samples were collected on 04-30-2003 and 05-05,06,07-2003.

The samples and their associated QC samples were prepared according to method 3580A (waste dilution-1g into 5mL) on 05-14-2003 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedure, method 8015B on 05-14-2003 for Methanol, Ethyl Ether and 1-Butanol.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
2. Samples were extracted and analyzed within required holding time.
3. The method blank was below the reporting limits for all target compounds.
4. Surrogates are not currently employed in the methodology.
5. All blank spike recoveries were within acceptance criteria.
6. All matrix spike recoveries were within acceptance criteria.
7. All initial calibrations associated with this data set were within acceptance criteria.
8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.



Iain Daniels

Laboratory Manager

Lionville Laboratory Incorporated

6/19/03
Date

r:\group\data\gcsc\tnu\0305w339x,357x,366x,372x.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 24 pages.



GLOSSARY OF GC SCAN DATA

DATA QUALIFIERS

- U** = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J** = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B** = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E** = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I** = Interference.

ABBREVIATIONS

- BS** = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD** = Indicates blank spike duplicate.
- MS** = Indicates matrix spike.
- MSD** = Indicates matrix spike duplicate.
- DL** = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA** = Not Applicable.
- DF** = Dilution Factor.
- NR** = Not Required.
- SP** = Indicates Spiked Compound.



GLOSSARY OF GC SCAN DATA

- P** = This flag is used for an GC SCAN target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- D** = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C** = This flag applies to a compound that has been confirmed by GC SCAN.

Lionville Laboratory, Inc.

GC SCAN

Report Date: 06/15/03 12:56

RFW Batch Number: 0305L339

Client: TNUHANFORD F03-006 H2195 Work Order: 11343606001 Page: 1

00

	Cust ID:	B16W84	B16W85	BLK	BLK BS
Sample	RFW#:	001	002	03LE0578-MB1	03LE0578-MB1
Information	Matrix:	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00
	Units:	mg/kg	mg/kg	mg/kg	mg/kg

	fl	fl	fl	fl	fl
Methanol	24 U	24 U	25 U	101 %	
Ethyl Ether	24 U	24 U	25 U	86 %	
1-Butanol	24 U	24 U	25 U	94 %	

Handwritten signature/initials

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.
 %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

Lionville Laboratory, Inc.

GC SCAN

Report Date: 06/15/03 12:56 *o*

RFW Batch Number: 0305L357

Client: TNUHANFORD F03-006 H2195 Work Order: 11343606001 Page: 1

Cust ID: B16W86 BLK BLK BS

Sample	RFW#:	001	03LE0578-MB1	03LE0578-MB1
Information	Matrix:	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00
	Units:	mg/kg	mg/kg	mg/kg

=====fl=====fl=====fl=====fl=====fl=====fl=====
Methanol 23 U 25 U 101 %
Ethyl Ether 23 U 25 U 86 %
1-Butanol 23 U 25 U 94 %

Aug 6/16/03

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.
 %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

GC SCAN

Report Date: 06/15/03 12:57

RFW Batch Number: 0305L366

Client: **TNUHANFORD F03-006 H2195** Work Order: 11343606001 Page: 1

	Cust ID:	B16W87	B16W87	B16W87	BLK	BLK BS
Sample Information	RFW#:	001	001 MS	001 MSD	03LE0578-MB1	03LE0578-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00
	Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg

	fl	fl	fl	fl	fl	fl
Methanol	26 U	101 %	99 %	25 U	101 %	
Ethyl Ether	26 U	81 %	83 %	25 U	86 %	
1-Butanol	26 U	97 %	97 %	25 U	94 %	

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

Lionville Laboratory, Inc.

GC SCAN

Report Date: 06/15/03 12:57

RFW Batch Number: 0305L372

Client: TNUHANFORD F03-006 H2195 Work Order: 11343606001 Page: 1

	Cust ID:	B16W88	BLK	BLK BS
Sample	RFW#:	001	03LE0578-MB1	03LE0578-MB1
Information	Matrix:	SOLID	SOIL	SOIL
	D.F.:	1.00	1.00	1.00
	Units:	mg/kg	mg/kg	mg/kg

	fl	fl	fl	fl	fl
Methanol	22 U	25 U	101 %		
Ethyl Ether	22 U	25 U	86 %		
1-Butanol	22 U	25 U	94 %		

7/8/03

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.
 %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC



0305L339

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client <u>TNU-Hamford</u> <u>F03-006</u>		Refrigerator #		2	
Est. Final Proj. Sampling Date		#/Type Container		Liquid	
Project # <u>11343-606-001-9999-00</u>		Solid		120 60 120	
Project Contact/Phone #		Volume		Liquid	
Lionville Laboratory Project Manager <u>Orlante Johnson</u>		Solid		120 60 120	
QC <u>SPEC</u> Del <u>STD</u> TAT <u>30 days</u>		Preservatives		-	
Date Rec'd <u>5-3-03</u> Date Due <u>6-16-03</u>		ANALYSES REQUESTED		ORGANIC	
				INORG	
				Metal CN	
				Hx H2O2 NO2- NO3- OL- Sulfate	
				VOA BNA Pest/PCB Herb	
				Lionville Laboratory Use Only	
				ICR1 IN3N2 IOGGR	
				X X X	
				X X X	

MATRIX CODES:

S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum
DL - Drum
L - EP/TCLP
WI - Wipe
X - Other
F - Fish

Lab ID

Client ID/Description

Matrix QC Chosen (✓)

Matrix

Date Collected

Time Collected

MS MSD

001 B16W84

S 4-30-03 0900

002 B16W85

L 1 1238

Special Instructions:

SAF # F03-006

~~Batch Matrix QC~~

Batch QC For 1339, 357, 366, 372

DATE/REVISIONS:

5-14-03

1. Per Client Due Date: 6-16-03

2. Add Ag, As, B, Ba, Be, Bi, Cd, Cr, Cu, Hg,

3. Ni, Pb, Sb, Se/Ic: Cl, F, NO₂, NO₃, PO₄, SO₄

4. INH3N, IPH, 0624H, 0625X, 06CSC, OPICB

5. ODR0, OGR0

6.

Lionville Laboratory Use Only

Samples were:

1) Shipped ☒ or Hand Delivered

Airbill #

7907 6589 3774

2) Ambient or ☒ Chilled3) Received in Good Condition ☒ or N4) Samples Properly Preserved ☒ or N5) Received Within Holding Times ☒ or N

Tampor Resistant Seal was:

1) Present on Outer Package ☒ or N2) Unbroken on Outer Package ☒ or N3) Present on Sample ☒ or N4) Unbroken on Sample ☒ or NCOC Record Present Upon Sample Rec't ☒ or NCooler Temp. 0.6 °C

Relinquished by

Received by

Date

Time

Relinquished by

Received by

Date

Time

COMPOSITE WASTE

ORIGINAL REWRITTEN

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES:

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-000-01							
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N	Data Turnaround 45 Days					
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (72.5'-75')		SAF No. F03-006		Air Quality <input type="checkbox"/>								
Ice Chest No. ERC-01-038		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express								
Shipped To RELIANCE SERVICES (Formerly TMA) 4/12/03		Offsite Property No. R030221		Bill of Lading/Air Bill No. SEE OSF										
POSSIBLE SAMPLE HAZARDS/REMARKS Radiactive Tie TO B16WDO Special Handling and/or Storage COB 14°L				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None					
				Type of Container	aG	aG	aG	aG	aG					
				No. of Container(s)	1	1	1	1	1					
				Volume	120mL	60mL	120mL	60mL	60mL					
				SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions	Tritium - H3		
Sample No.	Matrix *	Sample Date	Sample Time											
B16W84	SOIL	4-30-03	1900	X	X	X								
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS					Matrix *					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (1) Technetium-99; Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 150 4/12/03		S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time								
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time								
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time								
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time								
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time								
LABORATORY SECTION				Received By				Title						
FINAL SAMPLE DISPOSITION				Disposal Method				Disposed By						

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-68		Page 1 of 1				
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days			
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (97.5'-100')				SAF No. F03-006		Air Quality <input type="checkbox"/>					
Ice Chest No. ERC 01-028		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express							
Shipped To BERLINE SERVICES (Formerly TMA) 4/22/03		Offsite Property No. A030 221				Bill of Lading/Air Bill No. SEF 05PC							
POSSIBLE SAMPLE HAZARDS/REMARKS Radioactive TrTo B16WPI Special Handling and/or Storage Cool 40C				Preservation		Cool 4C	Cool 4C	Cool 4C	None	None			
				Type of Container		aG	aG	aG	aG	aG			
				No. of Container(s)		1	1	1	1	1			
				Volume		120mL	60mL	120mL	60mL	60mL			
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions	Tritium - H3					
								T10 TO:					
Sample No.	Matrix *	Sample Date	Sample Time										
B16W85	SOIL	4-30-03	1238	X	X	X	/			B16WPI			
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS 982 4/22/03					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		The laboratory is to achieve a detection limit of 30.0 PC/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (1) Technetium-99, Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 4/22/03 982					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
LABORATORY SECTION		Received By		Title				Date/Time					
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time					

LIONVILLE LABORATORY INCORPORATED SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hartford

Purchase Order/Project:

DATE: 5-3-03

AF# / SOW# / Release #: F03-006

Laboratory SDG #:

0305L339

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | | | | |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets Lvl1 Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

Exc 01-038 / 0.6 °C

Laboratory Sample Custodian:

Laboratory Project Manager:

J. Smith

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

[illegible]

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-69		Page 1 of 1			
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days		
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (147.5'-150')		SAF No. F03-006		Air Quality <input type="checkbox"/>						
Ice Chest No. <i>ERC-01-063</i>		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express						
Shipped To <i>KECKA 154</i> BERLINE SERVICES (Formerly TMA) <i>4/22/03</i>		Offsite Property No. <i>A030 222</i>		Bill of Lading/Air Bill No. <i>SEE OSLR</i>								
POSSIBLE SAMPLE HAZARDS/REMARKS <i>Radiation</i> <i>Tie To B16 WDO</i> Special Handling and/or Storage <i>COOL 4°C</i>				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None			
				Type of Container	aG	aG	aG	aG	aG			
				No. of Container(s)	1	1	1	1	1			
				Volume	120mL	60mL	120mL	60mL	60mL			
					Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions	Tritium - H3			
SAMPLE ANALYSIS												
Sample No.	Matrix *	Sample Date	Sample Time									
B16W86	SOIL	5/5/3	0900	X	X	X					<i>Tie To: B16 WDO</i>	
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				
Relinquished By/Removed From <i>PH</i>		Date/Time <i>5/5/03 1315</i>		Received By/Stored In <i>REF 1A</i>		Date/Time <i>5-5-03 1315</i>		** The laboratory is to achieve a detection limit of 50.0 µg/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (+) Technetium-99; Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 <i>98 4/22/03</i> Personnel not available to relinquish samples from the 3728 Ref # <i>1A</i> on <i>5 16 03</i>				
Relinquished By/Removed From <i>1A 3728</i>		Date/Time <i>5-6-03 1000</i>		Received By/Stored In <i>R. F. Hulstrom</i>		Date/Time <i>5-6-03</i>						
Relinquished By/Removed From <i>J. Keck</i>		Date/Time <i>5-6-03</i>		Received By/Stored In <i>FedEx</i>		Date/Time						
Relinquished By/Removed From <i>Keck</i>		Date/Time <i>5-7-03 10:10</i>		Received By/Stored In <i>D. Hulstrom</i>		Date/Time <i>5-7-03 10:10</i>						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Matrix * S=Soil SE=Soilment SO=Solid SH=Shutge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Time W=Wipe L=Liquid V=Vegetation X=Other				
LABORATORY SECTION		Received By		Title		Date/Time						
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time						

LIONVILLE LABORATORY INCORPORATED

SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hanford

Purchase Order/Project:

DATE: 5.7.03

AF# / SOW# / Release #: F03-006

Laboratory SDG #:

0305L357

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | | | | |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets LVL Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

EEC-01-063 / 2.3°

Laboratory Sample Custodian:

Laboratory Project Manager:

[Signature]

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-70		Page 1 of 1						
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days					
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (197.5'-200')		SAF No. F03-006		Air Quality <input type="checkbox"/>									
Ice Chest No. ERC 99.022		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express									
Shipped To EBERLINE SERVICES (Formerly TMA) 4/2/03		Offsite Property No. A030 222		Bill of Lading/Air Bill No. SEE 03PC											
POSSIBLE SAMPLE HAZARDS/REMARKS Radioactive Tie To B16WDO Special Handling and/or Storage cool 4°C				Preservation		Cool 4C	Cool 4C	Cool 4C	None	None					
				Type of Container		aG	aG	aG	aG	aG					
				No. of Container(s)		1	1	1	1	1					
				Volume		120mL	60mL	120mL	60mL	60mL					
						Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions	Tritium - H3					
SAMPLE ANALYSIS															
Sample No.		Matrix *		Sample Date		Sample Time									
B16W87		SOIL		5/6/03		0945				Tie To: B16WDO					
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		** The laboratory is to achieve a detection limit of 30.0 µg/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (1) Technetium-99; Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 Personnel not available to relinquish samples from the 3728 Ref #1A on 5/17/03							
Johansen/Pope/Pfister		5/6/03 1100		REF 1A 3728		5/6/03 1100									
1A 3728		5-7-03 1000		R. Full		5-7-03 1000									
R. Full		5-7-03 1000		FedEx											
R. Full		5-7-03 1000		FedEx											
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time									
Johansen/Pope/Pfister		5-8-03 10:00		S. Hulstrom		5-8-03 10:00									
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time									
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time									
LABORATORY SECTION		Received By		Title				Date/Time							
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time							

LIONVILLE LABORATORY INCORPORATED

SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hartford

Purchase Order/Project:

DATE: 5.8.03

AF# SOW# / Release #: F03-006

Laboratory SDG #:

0305L366

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | | | | |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets LVLJ Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

ERC 99-022 / 2.0°C

Laboratory Sample Custodian:

[Signature]

Laboratory Project Manager:

21

Lionville Laboratory Use Only

Custody Transfer Record/Lab Work Request Page 1 of 1



03056372

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

A B C

Client <u>INU - HANFORD</u> <u>F03-006</u>				Refrigerator #		2		1																																				
Est. Final Proj. Sampling Date				#/Type Container	Liquid																																							
Project # <u>11343-606.001-9999-00</u>					Solid																																							
Project Contact/Phone #				Volume	Liquid																																							
Lionville Laboratory Project Manager <u>05</u>					Solid																																							
QC <u>SPEC</u> Del <u>SD</u> TAT <u>30 days</u>				Preservatives																																								
Date Rec'd <u>5-9-03</u> Date Due <u>6-16-03</u>				ANALYSES REQUESTED		<table border="1"> <tr> <th colspan="5">ORGANIC</th> <th colspan="2">INORG</th> </tr> <tr> <th>VOA</th> <th>BNA</th> <th>Pest/PCB</th> <th>Herb</th> <th></th> <th>Metal</th> <th>CN</th> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td>chem</td> <td>hex</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td>NO2</td> <td>NO3</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td>oil</td> <td>grease</td> </tr> </table>				ORGANIC					INORG		VOA	BNA	Pest/PCB	Herb		Metal	CN						chem	hex						NO2	NO3						oil	grease
ORGANIC					INORG																																							
VOA	BNA	Pest/PCB	Herb		Metal	CN																																						
					chem	hex																																						
					NO2	NO3																																						
					oil	grease																																						
MATRIX CODES: S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air DS - Drum Solids DL - Drum Liquids L - EP/TCLP Leachate WI - Wipe X - Other F - Fish	Lab ID	Client ID/Description	Matrix OC Chosen (✓)	Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only																																					
			MS MSD																																									
	001	B16W88	✓ ✓	SO	5-20-03	1050																																						
			✓																																									

Special Instructions:

SAF + F03-006

Batch QC for L339, 357, 366, 372

DATE/REVISIONS:

5-14-03 1. Per Client Due Date: 6-16-03

2. Add Ag, As, B, Ba, Bi, Cd, Cr, Cu, Hg, Ni, Pb,

3. Sb, Se / IC: Cl, F, NO₃, NO₂, PO₄, SO₄

4. TANH, LPH, 0624H, 0625X, OGCSC, OACB

5. ODR0, OGR0

6.

Lionville Laboratory Use Only

Samples were:

1) Shipped ☒ or Hand DeliveredAirbill # 505
6E10W2) Ambient or ☒ Chilled3) Received in Good Condition ☒ or N4) Samples Properly Preserved ☒ or N5) Received Within Holding Times ☒ or N

Tamper Resistant Seal was:

1) Present on Outer Package ☒ or N2) Unbroken on Outer Package ☒ or N3) Present on Sample ☒ or N4) Unbroken on Sample ☒ or NCOC Record Present Upon Sample Rec't ☒ or NCooler Temp. 1.5 °C

Relinquished by	Received by	Date	Time
FE06x	Carly King	5-9-03	0930

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL REWRITTEN		

Discrepancies Between Samples Labels and COC Record? Y or ☒ N
NOTES:

791589128567

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-71		Page 1 of 1		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (237.5'-240')				SAF No. F03-006		Air Quality <input type="checkbox"/>			
Ice Chest No. ERC-01-040		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To RECEIVED EBERLINE SERVICES (Formerly TMA) <i>4/22/03</i>		Offsite Property No.				Bill of Lading/Air Bill No. See OSCP					
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container	aG	aG	aG	aG	aG		
				No. of Container(s)	1	1	1	1	1		
				Volume	120mL	60mL	120mL	60mL	60mL		
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions	Tritium - H3			
				<i>See 4/22/03</i>							
Sample No.	Matrix *	Sample Date	Sample Time								
B16W88	SOIL	5-7-03	1050	X	X	X					
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p><i>792 4/22/03</i></p> <p>** The laboratory is to achieve a detection limit of 30.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.</p> <p><i>(1) Technetium-99; Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237</i></p> <p><i>792 4/22/03</i></p> <p>Personnel not available to relinquish samples from the 3728 Ref # 1B on 5/18/03</p>			
<i>3728 Ref 1B</i>		<i>5/7/03 1440</i>		<i>3728 Ref 1B</i>		<i>5/7/03 1440</i>					
<i>3728 Ref 1B</i>		<i>5/8/03 0830</i>		<i>3728 Ref 1B</i>		<i>5/8/03 0830</i>					
<i>FEDEX</i>		<i>5/9-03 0930</i>		<i>FEDEX</i>		<i>5/9-03 0930</i>					
<i>FEDEX</i>		<i>5/9-03 0930</i>		<i>FEDEX</i>		<i>5/9-03 0930</i>					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>Matrix *</p> <p>S=Soil SE=Sediment SO=Solid SI=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other</p>			
<i>FEDEX</i>		<i>5/9-03 0930</i>		<i>FEDEX</i>		<i>5/9-03 0930</i>					
LABORATORY SECTION		Received By				Title				Date/Time	
FINAL SAMPLE DISPOSITION		Disposal Method				Disposed By				Date/Time	

LIONVILLE LABORATORY INCORPORATED
SAMPLE RECEIPT CHECKLIST

CLIENT: TNU HANFORD

Purchase Order/Project:

DATE: 5-9-03

AF# / SOW# / Release #: 1F03-006

Laboratory SDG #: 03056372

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | | | | |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets LvLI Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

1.5°
ERC 01 - 040

Laboratory Sample Custodian:

Laboratory Project Manager:

24

Lionville Laboratory, Inc.
GRO ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2195

DATE RECEIVED: 05/03/03

LVL LOT # :0305L339

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W84	001	S	03LVJ514	04/30/03	N/A	06/14/03
B16W85	002	S	03LVJ514	04/30/03	N/A	06/14/03

LAB QC:

TBLKIY	MB1	S	03LVJ514	N/A	N/A	06/14/03
TBLKIY	MB1 BS	S	03LVJ514	N/A	N/A	06/14/03



Handwritten signature/initials

Lionville Laboratory, Inc.
GRO ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2195

DATE RECEIVED: 05/07/03

LVL LOT # :0305L357

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W86	001	S	03LVJ514	05/05/03	N/A	06/14/03

LAB QC:

TBLKIY	MB1	S	03LVJ514	N/A	N/A	06/14/03
TBLKIY	MB1 BS	S	03LVJ514	N/A	N/A	06/14/03

Handwritten signature/initials

Lionville Laboratory, Inc.
GRO ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2195

DATE RECEIVED: 05/08/03

LVL LOT # :0305L366

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W87	001	S	03LVJ514	05/06/03	N/A	06/14/03

LAB QC:

TBLKIY	MB1	S	03LVJ514	N/A	N/A	06/14/03
TBLKIY	MB1 BS	S	03LVJ514	N/A	N/A	06/14/03

28 6/14/03

Lionville Laboratory, Inc.
GRO ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2195

DATE RECEIVED: 05/09/03

LVL LOT # :0305L372

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W88	001	SO	03LVJ514	05/07/03	N/A	06/14/03
B16W88	001 MS	SO	03LVJ514	05/07/03	N/A	06/14/03
B16W88	001 MSD	SO	03LVJ514	05/07/03	N/A	06/14/03

LAB QC:

TBLKIY	MB1	S	03LVJ514	N/A	N/A	06/14/03
TBLKIY	MB1 BS	S	03LVJ514	N/A	N/A	06/14/03

Handwritten signature/initials



Analytical Report

Client: TNU-HANFORD F03-006
LVL #: 0305L339, 0305L357,
0305L366, 0305L372

W.O. #: 11343-606-001-9999-00
Date Received: 05-03,07,08,09-2003
SDG/SAF # H2195/F03-006


GRO

Five (5) soil/solid samples were collected on 04-30-2003 and 05-05,06,07-2003.

The samples and their associated QC samples were analyzed according to Lionville Laboratory OPs based on SW-846 method 8015 for Gasoline Range Organics (GRO) on 06-14-2003. The analysis met the intent of method WTPH-G.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from samples that met LVLI's sample acceptance policy.
2. The required holding time for analysis has been met.
3. The method blank was below the reporting limits for all target compounds.
4. All surrogate recoveries were within acceptance criteria.
5. The blank spike recovery was within acceptance criteria.
6. The matrix spike recoveries were within acceptance criteria.
7. All initial calibrations associated with this data set were within acceptance criteria.
8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.


Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated


Date

son\group\data\gro\tnu-hanford\0305-339,357,366,372.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 2 4 pages.



GLOSSARY OF GASOLINE RANGE ORGANICS DATA

DATA QUALIFIERS

- U** = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J** = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B** = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E** = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I** = Interference.

ABBREVIATIONS

- BS** = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD** = Indicates blank spike duplicate.
- MS** = Indicates matrix spike.
- MSD** = Indicates matrix spike duplicate.
- DL** = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA** = Not Applicable.
- DF** = Dilution Factor.
- NR** = Not Required.
- SP** = Indicates Spiked Compound.



GLOSSARY OF GASOLINE RANGE ORGANICS DATA

- D** = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C** = This flag applies to a compound that has been confirmed by GC/MS.

R:/SHARE/GCVOLATILE/GCVOLATILEGLOS.DOC

Lionville Laboratory, Inc.

GAS RANGE ORGANICS

Report Date: 06/18/03 12:40

RFW Batch Number: 0305L339

Client: TNUHANFORD F03-006 H2195 Work Order: 11343606001 Page: 1

	Cust ID:	B16W84	B16W85	TBLKIY	TBLKIY BS
Sample	RFW#:	001	002	03LVJ514-MB1	03LVJ514-MB1
Information	Matrix:	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG
<hr/>					
	Fluorobenzene	77 %	83 %	98 %	109 %
		-----fl-----	-----fl-----	-----fl-----	-----fl-----
Gasoline Range Organics (GRO)		30 U	33 U	30 U	105 %
<hr/>					

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.
 %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

98-6/18/03

Report Date: 06/18/03 12:48

Client: TNUHANFORD F03-006 H2195 Work Order: 11343606001 Page: 1

[illegible]

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

11/1/83

Lionville Laboratory, Inc.

GAS RANGE ORGANICS

Report Date: 06/18/03 12:49

RFW Batch Number: 0305L366

Client: TNUHANFORD F03-006 H2195 Work Order: 11343606001 Page: 1

1

	Cust ID:	B16W87	TBLKIY	TBLKIY BS
Sample	RFW#:	001	03LVJ514-MB1	03LVJ514-MB1
Information	Matrix:	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG
<hr/>				
	Fluorobenzene	60 %	98 %	109 %
		=====fl=====	=====fl=====	=====fl=====
	Gasoline Range Organics (GRO)	30 U	30 U	105 %

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.
 %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

Handwritten signature/initials

Lionville Laboratory, Inc.

GAS RANGE ORGANICS

Report Date: 06/18/03 12:49

RFW Batch Number: 0305L372

Client: TNUHANFORD F03-006 H2195 Work Order: 11343606001 Page: 1

11

	Cust ID:	B16W88	B16W88	B16W88	TBLKIY	TBLKIY BS
Sample	RFW#:	001	001 MS	001 MSD	03LVJ514-MB1	03LVJ514-MB1
Information	Matrix:	SOLID	SOLID	SOLID	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
<hr/>						
	Fluorobenzene	86 %	92 %	87 %	98 %	109 %
	=====fl=====	fl=====	fl=====	fl=====	fl=====	fl=====
Gasoline Range Organics (GRO)		30 U	109 %	103 %	30 U	105 %
<hr/>						

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.
 %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

Handwritten signature/initials

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS[illegible]

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST							
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N	Data Turnaround 45 Days
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (72.5'-75')				SAF No. F03-006		Air Quality <input type="checkbox"/>	
Ice Chest No. ERC-01-038		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express			
Shipped To PERRA EBERLINE SERVICES (Formerly TMA) 4/12/03		Offsite Property No. A030221				Bill of Lading/Air Bill No. SEE OSA			
POSSIBLE SAMPLE HAZARDS/REMARKS Radioactive Tie To B16WDO Special Handling and/or Storage COB 14°L				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None
				Type of Container	aG	aG	aG	aG	aG
				No. of Container(s)	1	1	1	1	1
				Volume	120mL	60mL	120mL	60mL	60mL
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions	Tritium - H3	
									Tie To:
Sample No.	Matrix *	Sample Date	Sample Time						
B16W84	SOIL	4-30-03	0900	X	X	X			B16WDO
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (1) Technetium-99, Strontium-89, 90 - Total Sr, Isotopic Thorium (Thorium-232), Carbon-14, Iodine-129, Nickel-63, Neptunium-237 4/12/03	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
LABORATORY SECTION		Received By		Title				Date/Time	
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time	

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-68		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N	Data Turnaround 45 Days
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (97.5'-100')		SAF No. F03-006		Air Quality <input type="checkbox"/>		14	
Ice Chest No. ERC 01-028		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express			
Shipped To PERMA EBSERLINE SERVICES (Formerly TMA) 4/22/03		Offsite Property No. A030 221		Bill of Lading/Air Bill No. SEF 05PC					
POSSIBLE SAMPLE HAZARDS/REMARKS Radioactive TricTo B16WPI Special Handling and/or Storage Cool 40C				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None
				Type of Container	aG	aG	aG	aG	aG
				No. of Container(s)	1	1	1	1	1
				Volume	120mL	60mL	120mL	60mL	60mL
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions	Tritium - HD	
Sample No.	Matrix *	Sample Date	Sample Time						
B16W85	SOIL	4-30-03	1238	X	X	X			B16WPI
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *	
Relinquished By/Removed From M. Hulstrom 4/20/03 1430		Received By/Stored In R. C. 4/30/03 1430		** The laboratory is to achieve a detection limit of 50.0 µg/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (1) Technetium-99, Strontium-89,90 - Total SE; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 4/22/03 952				S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other	
Relinquished By/Removed From K. Felder 4-30-03 1430		Received By/Stored In LB 3728 4-30-03							
Relinquished By/Removed From LB 3728 5-2-03 1000		Received By/Stored In K. Felder 5-2-03 1000							
Relinquished By/Removed From K. Felder 5-2-03 1000		Received By/Stored In K. Felder							
Relinquished By/Removed From K. Felder 5-3-03 11:00		Received By/Stored In K. Felder 5-3-03 11:00							
Relinquished By/Removed From		Received By/Stored In							
LABORATORY SECTION		Received By		Title				Date/Time	
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time	

LIONVILLE LABORATORY INCORPORATED

SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hartford

Purchase Order/Project:

DATE: 5-3-03

AF# / SOW# / Release #: F03-006

Laboratory SDG #:

0305L339

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | | | | |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets LVLJ Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

Exc 01-038 / 0.6°C

Laboratory Sample Custodian:

Laboratory Project Manager:

D. Smith

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client TNU-Hamford F03-006					
Est. Final Proj. Sampling Date _____					
Project # 11343 - 606-001.9999.00					
Project Contact/Phone # _____					
Lionville Laboratory Project Manager <u>Charlotte Johnson</u>					
QC SPEC Del STD TAT 30 days					
Date Rec'd 5-7-03 Date Due 6-16-03					
Refrigerator # _____					
#/Type Container Liquid _____ Solid _____					
Volume Liquid _____ Solid _____					
Preservatives _____					
ANALYSES REQUESTED →					
ORGANIC INORG					
VOA BNA Pes/PCB Herb Metal CN					
Lionville Laboratory Use Only					
MATRIX CODES:					
S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air DS - Drum Solids DL - Drum Liquids L - EP/TCLP Leachate WI - Wipe X - Other F - Fish					
Lab ID Client ID/Description Matrix QC Chosen (V) MS MSD					
001 BibbW86 S 55-03 0900					
Special Instructions: SAF ± F03-006					
DATE/REVISIONS:					
5-14-03 1. Per Chart Due Date = 6-16-03					
2. Add Ag, As, B, Ba, Be, Bi, Cd, Cr, Cu, Hg, Ni,					
3. Pb, Sb, Se / IC: Cl, FI, NO ₂ , NO ₃ , PO ₄ , SO ₄					
4. INH3N, IPH, OBZKH, OBZSX, OGCSG, OPCD					
5. ODRS, OGRS					
6.					
Lionville Laboratory Use Only					
Samples were: 1) Shipped <input checked="" type="checkbox"/> or Hand Delivered _____ Airbill # 7928 839 7200 2) Ambient or <input checked="" type="checkbox"/> Chilled 3) Received in Good Condition <input checked="" type="checkbox"/> or N 4) Samples Properly Preserved <input checked="" type="checkbox"/> or N 5) Received Within Holding Times <input checked="" type="checkbox"/> or N Tamper Resistant Seal was: 1) Present on Outer Package <input checked="" type="checkbox"/> or N 2) Unbroken on Outer Package <input checked="" type="checkbox"/> or N 3) Present on Sample <input checked="" type="checkbox"/> or N 4) Unbroken on Sample <input checked="" type="checkbox"/> or N COC Record Present Upon Sample Rec'l <input checked="" type="checkbox"/> or N Cooler Temp. 23 °C					
Discrepancies Between Samples Labels and COC Record? Y or N					
NOTES:					
Retinquished by Received by Date Time					
Med Ex D. Smith 5-7-03 10:10					
COMPOSITE ORIGINAL WASTE REWRITTEN					

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-69		Page 1 of 1			
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days		
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (147.5'-150')		SAF No. F03-006		Air Quality <input type="checkbox"/>						
Ice Chest No. <i>ERC-01-063</i>		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express						
Shipped To <i>KECKA 18m</i> EBERLINE SERVICES (Pomery TIM) <i>4/22/03</i>		Offsite Property No. <i>A030 222</i>		Bill of Lading/Air Bill No. <i>SEE OSPL</i>								
POSSIBLE SAMPLE HAZARDS/REMARKS <i>Radiation</i> <i>Tie To B16WDO</i> Special Handling and/or Storage <i>cool 4°C</i>				Preservation		Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container		aG	aG	aG	aG	aG		
				No. of Container(s)		1	1	1	1	1		
				Volume		120mL	60mL	120mL	60mL	60mL		
SAMPLE ANALYSIS				Chromium Hex - 7196		NO2/NO3 - 353.2		Oil & Grease - 413.1		See item (1) in Special Instructions		
				Tritium - H3								
Sample No.		Matrix *		Sample Date		Sample Time						
B16W86		SOIL		5/5/3		0900		<i>Tie To: B16WDO</i>				
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				
Relinquished By/Removed From <i>MA</i>		Date/Time <i>5/5/03 1315</i>		Received By/Stored In <i>REF 1A</i>		Date/Time <i>5-5-03 1315</i>		** The laboratory is to achieve a detection limit of 50.0 ppb for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. <i>4/22/03</i> (1) Technetium-99; Strontium-89,90 - Total Sr; isotopic Titanium (Thorium=232); Carbon-14; iodine-129; Nickel-63; Neptunium-237 <i>4/22/03</i> Personnel not available to relinquish samples from the 3728 Ref # <i>1A</i> on <i>5/16/03</i>				
Relinquished By/Removed From <i>1A 3728</i>		Date/Time <i>5-6-03 1000</i>		Received By/Stored In <i>Ref 1A on 5/6/03</i>		Date/Time <i>5-6-03</i>						
Relinquished By/Removed From <i>Ref 1A</i>		Date/Time <i>5-6-03</i>		Received By/Stored In <i>Ref 1A</i>		Date/Time						
Relinquished By/Removed From <i>Ref 1A</i>		Date/Time <i>5-7-03 10:10</i>		Received By/Stored In <i>Ref 1A</i>		Date/Time <i>5-7-03 10:10</i>						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
LABORATORY SECTION		Received By		Title				Date/Time				
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time				

LIONVILLE LABORATORY INCORPORATED SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hanford

Purchase Order/Project:

DATE: 5.7.03

AF# / SOW# / Release #: FO3-006

Laboratory SDG #:

0305L357

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | | | | |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets Lvl.1 Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

EEC-01-063 / 2.3"

Laboratory Sample Custodian:

Laboratory Project Manager:

[Signature]

0305L366

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client <u>TNU-Hamford</u> F03-006					
Est. Final Proj. Sampling Date _____					
Project # <u>11343-606.001-9999-00</u>					
Project Contact/Phone # _____					
Lionville Laboratory Project Manager <u>Dorlette Johnson</u>					
QC <u>SPEC</u> Del <u>STD</u> TAT <u>30 days</u>					
Date Rec'd <u>5-8-03</u> Date Due <u>6-16-03</u>					
Refrigerator # _____					
#/Type Container _____					
Volume _____					
Preservatives _____					
ANALYSES REQUESTED →					
ORGANIC VOA BNA Pest PCB Herb					
INORG Metal CN					
Lionville Laboratory Use Only					
MATRIX CODES: S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air DS - Drum Solids DL - Drum Liquids L - EP/TCLP Leachate WI - Wipe X - Other F - Fish					
Lab ID Client ID/Description Matrix OC Chosen (✓) MS MSD Matrix Date Collected Time Collected					
001 B16LJ87 X X S 5-6-03 0945					
Special Instructions: SAF # F03-006					
DATE/REVISIONS: 5-14-03 1. Per Chemist Due Date: 6-16-03 2. Add: As, Ar, Ba, Be, Bi, Cd, Cr, Cu, Hg, Ni, Pb Sb, Se / EC: Cl, Fl, NO ₃ , NO ₂ , P O ₄ , SO _x 3. INHIN, I PH, 0624H, 0625A, 06CSC, OPED 4. ODRN, OERO 5. 6.					
Lionville Laboratory Use Only					
Samples were: ✓ 1) Shipped or Hand Delivered _____ Airbill # <u>710774259278</u> 2) Ambient or Filtered _____ 3) Received in Good Condition (Y) or N 4) Samples Properly Preserved (Y) or N 5) Received Within Holding Times (Y) or N TAMPER RESISTANT SEAL was: 1) Present on Outer Package (Y) or N 2) Unbroken on Outer Package (Y) or N 3) Present on Sample (Y) or N 4) Unbroken on Sample (Y) or N COC Record Present Upon Sample Rec't (Y) or N Cooler Temp. <u>2.0</u> °C					
Discrepancies Between Samples Labels and COC Record? Y or N (N) NOTES:					
Relinquished by _____ Received by _____ Date _____ Time _____					
Relinquished by _____ Received by _____ Date _____ Time _____					

BHI-EE-011 (03/01/2002)

LIONVILLE LABORATORY INCORPORATED SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hartford

Purchase Order/Project:

DATE: 5.8.03

AF# / SOW# / Release #: F03-006

Laboratory SDG #:

0305L366

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | | | | |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets LVL Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

ERC 99-022 / 2.0°C

Laboratory Sample Custodian:

[Signature]

Laboratory Project Manager:

03056372

Custody Transfer Record/Lab Work Request Page 1 of 1


LvLI
 LIONVILLE LABORATORY INC.

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client <u>TNU - HANFORD</u> <u>F03-006</u>				Refrigerator #		<div style="display: flex; justify-content: space-between;"> A B C </div> <div style="display: flex; justify-content: space-between;"> 2 1 22 </div>																
Est. Final Proj. Sampling Date				#/Type Container		Liquid																
Project # <u>11343-606.001-9999-00</u>						Solid		<div style="display: flex; justify-content: space-between;"> 1A6 1A6 1A6 </div>														
Project Contact/Phone #				Volume		Liquid																
Lionville Laboratory Project Manager <u>05</u>						Solid		<div style="display: flex; justify-content: space-between;"> 120 60 120 </div>														
QC <u>SPEC</u> Del <u>JD</u> TAT <u>30 days</u>				Preservatives																		
Date Rec'd <u>5-9-03</u> Date Due <u>6-16-03</u>				ANALYSES REQUESTED →		<div style="display: flex; justify-content: space-between;"> <div>ORGANIC</div> <div>INORG</div> </div> <div style="display: flex; justify-content: space-between;"> <div> VOA BNA Pest/PCB Herb </div> <div> Metal N </div> <div> Chem Hex NO2 NO3 Oil GREASE </div> </div>																
						<div style="display: flex; justify-content: space-between;"> <div> LIONVILLE LABORATORY USE ONLY </div> <div> LIONVILLE LABORATORY USE ONLY </div> </div>																
MATRIX CODES: S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air DS - Drum Solids DL - Drum Liquids L - EP/TCLP Leachate WI - Wipe X - Other F - Fish	Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	Time Collected																
			MS MSD																			
	001	B16W88	✓	SO	5-203	1050	<div style="display: flex; justify-content: space-between;"> <div> LIONVILLE LABORATORY USE ONLY </div> <div> LIONVILLE LABORATORY USE ONLY </div> </div>															

Special Instructions:

SAF # F03-006

Batch QC For L339, 357, 366, 372

DATE/REVISIONS:

5-14-03

1. Per Client Due Date: 6-16-03

2. Add Ag, As, B, Ba, Be, Bi, Cd, Cr, Cu, Hg, Ni, Pb,

3. Sb, Se / IC: Cl, FI, NO₂, NO₃, PO₄, SO₄4. INH₃N, IPH, 0624H, 0625X, 0625C, 0625B

5. ODR0, 0620

6.

Lionville Laboratory Use Only

Samples were:

1) Shipped ☒ or Hand DeliveredAirbill # 555
6E10W

2) Ambient or Chilled

3) Received in Good Condition ☒ or N4) Samples Properly Preserved ☒ or N5) Received Within Holding Times ☒ or N

Tampor Resistant Seal was:

1) Present on Outer Package ☒ or N2) Unbroken on Outer Package ☒ or N3) Present on Sample ☒ or N4) Unbroken on Sample ☒ or NCOC Record Present Upon Sample Rec'd ☒ or NCooler Temp. 1.5 °C

Relinquished by	Received by	Date	Time
FEDEX	Carls King	5-9-03	0930

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL REWRITTEN		

 Discrepancies Between Samples Labels and COC Record? Y or ☒ N
 NOTES:

791589128567

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-71		Page 1 of 1		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (237.5'-240')				SAF No. F03-006		Air Quality <input type="checkbox"/>			
Ice Chest No. ERC-01-040		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To RELA BERLINE SERVICES (Formerly TMA) 4/22/03		Offsite Property No.				Bill of Lading/Air Bill No. see OSPA					
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container	aG	aG	aG	aG	aG		
				No. of Container(s)	1	1	1	1	1		
				Volume	120mL	60mL	120mL	60mL	60mL		
					Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions.	Tritium - H3		
SAMPLE ANALYSIS				TILTO:							
Sample No.	Matrix *	Sample Date	Sample Time								
B16W88	SOIL	5-7-03	1050	X	X	X					B16W88
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		7/22/03 ** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (1) Technetium-99, Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232); Carbon-14, iodine-129; Nickel-63; Neptunium-237 7/22/03 Personnel not available to relinquish samples from the 3728 Ref # 1B on 5/18/03			
<i>[Signature]</i>		5/7/03 1440		SJOALC <i>[Signature]</i>		5/7/03 1440					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
3728 Ref 1B		5/8/03 0830		REF 1B 3728		5/20/03 1440					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
<i>[Signature]</i>		5/8/03 0830		FEDEX		5/16/03 0830					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
FEDEX		5-9-03 0930		<i>[Signature]</i>		5-9-03 0930					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
LABORATORY SECTION		Received By				Title				Date/Time	
FINAL SAMPLE DISPOSITION		Disposal Method				Disposed By				Date/Time	

LIONVILLE LABORATORY INCORPORATED

SAMPLE RECEIPT CHECKLIST

IENT: THU HANG RD

chase Order/Project:

DATE: 5-9-03

F# / SOW# / Release #: F03-006

laboratory SDG #: 03056372

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | | | | |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets LVL1 Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

1.5°

ERC 01 -040

Laboratory Sample Custodian:

Carl H...

Laboratory Project Manager:

Lionville Laboratory, Inc.
DRO ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2195

DATE RECEIVED: 05/03/03

LVL LOT # :0305L339

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W84	001	S	03LE0577	04/30/03	05/14/03	05/16/03
B16W85	002	S	03LE0577	04/30/03	05/14/03	05/16/03

LAB QC:

BLK	MB1	S	03LE0577	N/A	05/14/03	05/19/03
BLK	MB1 BS	S	03LE0577	N/A	05/14/03	05/19/03



Handwritten signature/initials

Lionville Laboratory, Inc.
DRO ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2195

DATE RECEIVED: 05/07/03

LVL LOT # :0305L357

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W86	001	S	03LE0577	05/05/03	05/14/03	05/19/03

LAB QC:

BLK	MB1	S	03LE0577	N/A	05/14/03	05/19/03
BLK	MB1 BS	S	03LE0577	N/A	05/14/03	05/19/03

Handwritten signature/initials
5/19/03

Lionville Laboratory, Inc.
DRO ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2195

DATE RECEIVED: 05/08/03

LVL LOT # :0305L366

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W87	001	S	03LE0577	05/06/03	05/14/03	05/16/03
B16W87	001 MS	S	03LE0577	05/06/03	05/14/03	05/19/03
B16W87	001 MSD	S	03LE0577	05/06/03	05/14/03	05/19/03

LAB QC:

BLK	MB1	S	03LE0577	N/A	05/14/03	05/19/03
BLK	MB1 BS	S	03LE0577	N/A	05/14/03	05/19/03

Handwritten signature
05/19/03

Lionville Laboratory, Inc.
DRO ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2195

DATE RECEIVED: 05/09/03

LVL LOT # :0305L372

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W88	001	SO	03LE0577	05/07/03	05/14/03	05/19/03

LAB QC:

BLK	MB1	S	03LE0577	N/A	05/14/03	05/19/03
BLK	MB1 BS	S	03LE0577	N/A	05/14/03	05/19/03

Handwritten signature



Analytical Report

Client: TNU-HANFORD F03-006
LVL #: 0305L339, 0305L357,
0305L366, 0305L372

W.O. #: 11343-606-001-9999-00
Date Received: 05-03,07,08,09-2003
SDG/SAF # H2195/F03-006

DIESEL RANGE ORGANICS

Five (5) soil/solid samples were collected on 04-30-2003 and 05-05,06,07-2003.

The samples and their associated QC samples were extracted on 05-14-2003 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 05-16,19-2003. The extraction procedure was based on method 3540 and the extracts were analyzed based on method 8015B. The analysis met the intent of method WTPH-D.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
2. Samples were extracted and analyzed within required holding time.
3. The method blank was below the reporting limits for all target compounds.
4. All surrogate recoveries were within acceptance criteria.
5. The blank spike recovery was within acceptance criteria.
6. The matrix spike recoveries were within acceptance criteria.
7. All initial calibrations associated with this data set were within acceptance criteria.
8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.


John Daniels

Laboratory Manager

Lionville Laboratory Incorporated


Date

son\vr\group\data\dro\tnu hanford\0305-339,357,366,372.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 2 4 pages.



GLOSSARY OF DIESEL RANGE ORGANICS DATA

DATA QUALIFIERS

- U** = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J** = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B** = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E** = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I** = Interference.

ABBREVIATIONS

- BS** = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD** = Indicates blank spike duplicate.
- MS** = Indicates matrix spike.
- MSD** = Indicates matrix spike duplicate.
- DL** = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA** = Not Applicable.
- DF** = Dilution Factor.
- NR** = Not Required.
- SP** = Indicates Spiked Compound.



GLOSSARY OF DIESEL RANGE ORGANICS DATA

- D** = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C** = This flag applies to a compound that has been confirmed by GC/MS.

DIESEL RANGE ORGANICS BY GC

Report Date: 06/18/03 10:34 00

Client: **TNUHANFORD F03-006 H2195** Work Order: 11343606001 Page: 1

	p-Terphenyl	99	%	82	%	106	%	91	%
Diesel Range Organics	13.1	U	12.9	U	12.0	U	74	%	
Kerosene	13.1	U	12.9	U	12.0	U	12.0	U	

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

DIESEL RANGE ORGANICS BY GC

9

Client: TNUHANFORD F03-006 H2195 Work Order: 11343606001 Page: 1

Sample Information	RFW#:	001	03LE0577-MB1	03LE0577-MB1
	Matrix:	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00
	Units:	mg/Kg	mg/Kg	mg/Kg

	p-Terphenyl	80	%	106	%	91	%
Diesel Range Organics	12.4	U		12.0	U	74	%
Kerosene	12.4	U		12.0	U	12.0	U

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

1800-11-13

DIESEL RANGE ORGANICS BY GC

RFW Batch Number: 0305L366

Client: TNUHANFORD F03-006 H2195 Work Order: 11343606001 Page: 1

101

7/8/61

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

Lionville Laboratory, Inc.

DIESEL RANGE ORGANICS BY GC

Report Date: 06/18/03 10:35

RFW Batch Number: 0305L372

Client: TNUHANFORD F03-006 H2195 Work Order: 11343606001 Page: 1

11

Cust ID: B16W88 BLK BLK BS

Sample RFW#: 001 03LE0577-MB1 03LE0577-MB1
Information Matrix: SOLID SOIL SOIL
D.F.: 1.00 1.00 1.00
Units: mg/Kg mg/Kg mg/Kg

	p-Terphenyl	84 %	106 %	91 %
Diesel Range Organics	12.2 U	12.0 U	74 %	
Kerosene	12.2 U	12.0 U	12.0 U	

Handwritten signature

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

A

Discrepancies Between
Samples Labels and
COC Record? Y or N

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						FUS-U00-01	
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (72.5'-75')		SAF No. F03-006		Air Quality <input type="checkbox"/>			
Ice Chest No. ERC-01-038		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express			
Shipped To RELIANCE EBERLINE SERVICES (Formerly TMA) 4/14/03		Offsite Property No. A030221		Bill of Lading/Air Bill No. SEE OSR				13	
POSSIBLE SAMPLE HAZARDS/REMARKS Radioactive Tie TO B16WDO Special Handling and/or Storage COB 140L				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None
				Type of Container	aG	aG	aG	aG	aG
				No. of Container(s)	1	1	1	1	1
				Volume	120mL	60mL	120mL	60mL	60mL
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions.	Tritium - H3	
									Tie TO!
Sample No.	Matrix *	Sample Date	Sample Time						
B16W84	SOIL	4-30-03	1900	X	X	X			B16WDO
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (1) Technetium-99; Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 ASR 4/22/03	
M. Hulstrom		4-30-03 1430		R. G. Hulstrom		4-30-03 1430			
R. G. Hulstrom		4-30-03 1430		R. G. Hulstrom		4-30-03 1430			
R. G. Hulstrom		4-30-03 1430		R. G. Hulstrom		4-30-03 1430			
R. G. Hulstrom		4-30-03 1430		R. G. Hulstrom		4-30-03 1430			
R. G. Hulstrom		4-30-03 1430		R. G. Hulstrom		4-30-03 1430			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Matrix * S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other	
R. G. Hulstrom		4-30-03 1430		R. G. Hulstrom		4-30-03 1430			
R. G. Hulstrom		4-30-03 1430		R. G. Hulstrom		4-30-03 1430			
R. G. Hulstrom		4-30-03 1430		R. G. Hulstrom		4-30-03 1430			
R. G. Hulstrom		4-30-03 1430		R. G. Hulstrom		4-30-03 1430			
R. G. Hulstrom		4-30-03 1430		R. G. Hulstrom		4-30-03 1430			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
R. G. Hulstrom		4-30-03 1430		R. G. Hulstrom		4-30-03 1430			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
R. G. Hulstrom		4-30-03 1430		R. G. Hulstrom		4-30-03 1430			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
R. G. Hulstrom		4-30-03 1430		R. G. Hulstrom		4-30-03 1430			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
R. G. Hulstrom		4-30-03 1430		R. G. Hulstrom		4-30-03 1430			
LABORATORY SECTION		Received By		Title		Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time			

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						F03-006-68		Page 1 of 1	
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (97.5'-100')		SAF No. F03-006		Air Quality <input type="checkbox"/>					
Ice Chest No. ERC 01-028		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To REPERA BERLINE SERVICES (Formerly TMA) 4/22/03		Offsite Property No. A030 221		Bill of Lading/Air Bill No. SEE OSPC							
POSSIBLE SAMPLE HAZARDS/REMARKS Radioactive Tie to B16WPI Special Handling and/or Storage cool 4°C				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container	aG	aG	aG	aG	aG		
				No. of Container(s)	1	1	1	1	1		
				Volume	120mL	60mL	120mL	60mL	60mL		
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions A/C 4/22/03	Tritium - H3			
Sample No.	Matrix *	Sample Date	Sample Time								
B16W85	SOIL	4-30-03	1238	X	X	X	/				B16WPI
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *			
Relinquished By/Removed From M. Hulstrom 4/20/03 1430		Received By/Stored In R. C. R. 4/20-03 1430		** The laboratory is to achieve a detection limit of 30.0 PCUg for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (1) Technetium-99, Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 4/22/03 952				S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other			
Relinquished By/Removed From J. Hulstrom 4-30-03		Received By/Stored In LB 3728 4-30-03									
Relinquished By/Removed From LB 3728 5-2-03		Received By/Stored In K. Hulstrom 5-2-03									
Relinquished By/Removed From K. Hulstrom 5-2-03		Received By/Stored In K. Hulstrom									
Relinquished By/Removed From Geo 5-3-03 11:00		Received By/Stored In Geo 5-3-03 11:00									
Relinquished By/Removed From		Received By/Stored In									
LABORATORY SECTION		Received By		Title				Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time			

LIONVILLE LABORATORY INCORPORATED

SAMPLE RECEIPT CHECKLIST

Client: TNU Hartford

Purchase Order/Project:

DATE: 5-3-03

AF# / SOW# / Release #: F03-006

Laboratory SDG #:

0305L339

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | | | | |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets Lvl 1 Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

ERC 01-038 / 0.6 °C

Laboratory Sample Custodian:

D. Smith

Laboratory Project Manager:

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS[illegible]

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-69		Page 1 of 1					
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days				
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (147.5'-150')		SAF No. F03-006		Air Quality <input type="checkbox"/>								
Ice Chest No. <i>FRC 01-063</i>		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express								
Shipped To <i>KECKA</i> EBERLINE SERVICES (Formerly TMA) <i>4/22/03</i>		Offsite Property No. <i>B030 222</i>		Bill of Lading/Air Bill No. <i>SEE OSPL</i>										
POSSIBLE SAMPLE HAZARDS/REMARKS <i>Radiation</i> <i>Tie To B16WDO</i> Special Handling and/or Storage <i>cool 4°C</i>				Preservation		Cool 4C	Cool 4C	Cool 4C	None	None				
				Type of Container		aG	aG	aG	aG	aG				
				No. of Container(s)		1	1	1	1	1				
				Volume		120mL	60mL	120mL	60mL	60mL				
				SAMPLE ANALYSIS		Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions	Tritium - H3				
Sample No.	Matrix *	Sample Date	Sample Time											
B16W86	SOIL	5/5/3	0900	X	X	X					<i>Tie To: B16WDO</i>			
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *						
Relinquished By/Removed From <i>THANHANSON/RENTON</i> <i>5/5/03</i> <i>1315</i>		Received By/Stored In <i>REF 1A</i> <i>5-5-03</i> <i>1315</i>		** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. <i>(1) Technetium-99; Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237</i> <i>Personnel not available to relinquish samples from the 3728 Ref # 1A on 5/16/03</i>				S=Soil SE=Soilment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Time W=Wipe L=Liquid V=Vegetation X=Other						
Relinquished By/Removed From <i>1A</i> <i>5728</i> <i>5-6-03</i> <i>1000</i>		Received By/Stored In <i>Ref 1A</i> <i>5-6-03</i> <i>1000</i>												
Relinquished By/Removed From <i>J. Kelley</i> <i>5-6-03</i> <i>1000</i>		Received By/Stored In <i>Felix</i>												
Relinquished By/Removed From <i>Ref 1A</i> <i>5-7-03</i> <i>10:10</i>		Received By/Stored In <i>Ref 1A</i> <i>5-7-03</i> <i>10:10</i>												
Relinquished By/Removed From		Received By/Stored In												
Relinquished By/Removed From		Received By/Stored In												
LABORATORY SECTION		Received By		Title				Date/Time						
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time						

LIONVILLE LABORATORY INCORPORATED SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hanford

Purchase Order/Project:

DATE: 5.7.03

AF# / SOW# / Release #: F03-006

Laboratory SDG #:

0305L357

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | | | | |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets LVL1 Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

EEC-01-063 / 2.3°

Laboratory Sample Custodian:

Laboratory Project Manager:

[Signature]

0305L366

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

[illegible]

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-70		Page 1 of 1			
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days		
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (197.5'-200')				SAF No. F03-006		Air Quality <input type="checkbox"/>				
Ice Chest No. ERC 99.022		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express				20		
Shipped To BERLINE SERVICES (Formerly TMA) 4/22/03		Offsite Property No. A030 222				Bill of Lading/Air Bill No. SEE 03PC						
POSSIBLE SAMPLE HAZARDS/REMARKS Radiation Site To B16WDO Special Handling and/or Storage cool 4°C				Preservation		Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container		aG	aG	aG	aG	aG		
				No. of Container(s)		1	1	1	1	1		
				Volume		120mL	60mL	120mL	60mL	60mL		
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instruction	Tritium - H3				
Sample No.	Matrix *	Sample Date	Sample Time									
B16W87	SOIL	5/6/03	0945	X	X	X						
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS 4/22/03 ** The laboratory is to achieve a detection limit of 30.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (1) Technetium-99; Strontium-89,90 = Total Sr; Isotopic Thorium (Thorium-232); Carbon-14, Iodine-129, Nickel-63, Neptunium-237 4/22/03 Personnel not available to relinquish samples from the 3728 Ref #1A on 5/7/03				
Relinquished By/Removed From Johansen/Pfister 5/6/03 1000		Received By/Stored In REF 1A 3728 5/6/03 1100										
Relinquished By/Removed From 1A 3728 5-7-03 1000		Received By/Stored In R. Full 5-7-03 1000										
Relinquished By/Removed From R. Full 5-7-03 1000		Received By/Stored In Fed Ex										
Relinquished By/Removed From Johansen 5-8-03 10:00		Received By/Stored In Johansen 5-8-03 10:00										
Relinquished By/Removed From		Received By/Stored In										
Relinquished By/Removed From		Received By/Stored In										
LABORATORY SECTION		Received By		Title				Date/Time				
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time				

LIONVILLE LABORATORY INCORPORATED SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hartford

Purchase Order/Project:

DATE: 5.8.03

AF# / SOW# / Release #: F03-006

Laboratory SDG #:

0305L366

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | | | | |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets LVL Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

ERC 99-022 / 2.0°C

Laboratory Sample Custodian:

[Signature]

Laboratory Project Manager:

A B C

<p>Special Instructions: SAF # F03-006</p> <p style="text-align: center; font-size: 1.2em;">Batch QC for 1339, 357, 366, 372</p>	<p>DATE/REVISIONS:</p> <p>5-14-03 1. Per Client Due Date: 6-16-03</p> <p>2. Add Ag, As, B, Ba, Bi, Cd, Cr, Cu, Hg, Ni, Pb,</p> <p>3. Sb, Se / IC: Cl, F, NO₃, NO₂, PO₄, SO₄</p> <p>4. IAHJN, IPH, 0624H, 0625X, 06CSC, 06AB</p> <p>5. 06RO, 06RO</p> <p>6.</p>	<p style="text-align: center; font-weight: bold;">Lionville Laboratory Use Only</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Samples were:</p> <p>1) Shipped <input checked="" type="checkbox"/> or Hand Delivered <input type="checkbox"/></p> <p>Airbill # <u>SCC 6E10W</u></p> <p>2) Ambient or <u>Chilled</u></p> <p>3) Received in Good Condition <input checked="" type="checkbox"/> or N</p> <p>4) Samples Properly Preserved <input checked="" type="checkbox"/> or N</p> <p>5) Received Within Holding Times <input checked="" type="checkbox"/> or N</p> </div> <div style="width: 45%;"> <p>Tamper Resistant Seal was:</p> <p>1) Present on Outer Package <input checked="" type="checkbox"/> or N</p> <p>2) Unbroken on Outer Package <input checked="" type="checkbox"/> or N</p> <p>3) Present on Sample <input checked="" type="checkbox"/> or N</p> <p>4) Unbroken on Sample <input checked="" type="checkbox"/> or N</p> <p>COC Record Present Upon Sample Rec'l <input checked="" type="checkbox"/> or N</p> <p>Cooler Temp. <u>1.5</u> °C</p> </div> </div> <p style="margin-top: 10px;">Discrepancies Between Samples Labels and COC Record? Y or <input checked="" type="checkbox"/> N</p> <p>NOTES:</p> <p style="font-size: 1.2em; font-weight: bold;">7915 8912 8567</p>
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Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
FEDEX	Carl King	5-9-03	0930	COMPOSITE WASTE			

ORIGINAL REWRITTEN

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-71		Page 1 of 1		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (237.5'-240')				SAF No. F03-006		Air Quality <input type="checkbox"/>			
Ice Chest No. ERC-01-04/0		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express				32	
Shipped To RELA EBERLINE SERVICES (Formerly TMA) 4/22/03		Offsite Property No.				Bill of Lading/Air Bill No. see OSCP					
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container	aG	aG	aG	aG	aG		
				No. of Container(s)	1	1	1	1	1		
				Volume	120mL	60mL	120mL	60mL	60mL		
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) & Special Instructions 4/22/03	Tritium - H3			
Sample No.	Matrix *	Sample Date	Sample Time								
B16W88	SOIL	5-7-03	1050	X	X	X					
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS			
Relinquished By/Removed From M. J. Hulstrom 5/7/03 1440		Date/Time		Received By/Stored In S. J. Hulstrom 5/7/03 1440		Date/Time		<p>** The laboratory is to achieve a detection limit of 30.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.</p> <p>(1) Technetium-99, Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232); Carbon-14, Iodine-129; Nickel-63; Neptunium-237 4/22/03</p> <p>Personnel not available to relinquish samples from the 3728 Ref # 16 on 5/8/03</p>			
Relinquished By/Removed From S. J. Hulstrom 5/7/03 1440		Date/Time		Received By/Stored In REF 1B 3728 5/7/03 1440		Date/Time					
Relinquished By/Removed From 3728 Ref 1B 5/8/03 0830		Date/Time		Received By/Stored In J. S. Hulstrom 5/8/03 0830		Date/Time					
Relinquished By/Removed From J. S. Hulstrom 5/8/03 0830		Date/Time		Received By/Stored In FEDEX		Date/Time					
Relinquished By/Removed From FEDEX 5-9-03 0930		Date/Time		Received By/Stored In J. S. Hulstrom 5-9-03 0930		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<p>Matrix *</p> <p>S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Dry Solids DL=Dry Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other</p>			
LABORATORY SECTION		Received By		Title		Date/Time					
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time					

LIONVILLE LABORATORY INCORPORATED

SAMPLE RECEIPT CHECKLIST

CLIENT: TNU HANOVER

Purchase Order/Project:

DATE: 5-9-03

PO# / SOW# / Release #: F03-006

Laboratory SDG #: 03056372

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | | | | |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets LVL1 Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

1.5°

ERC 01 -040

Laboratory Sample Custodian:

Carl H...

Laboratory Project Manager:

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2195



DATE RECEIVED: 05/03/03

LVL LOT # :0305L339

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W84						
SILVER, TOTAL	001	S	03L0284	04/30/03	05/22/03	05/31/03
SILVER, TOTAL	001 REP	S	03L0284	04/30/03	05/22/03	05/31/03
SILVER, TOTAL	001 MS	S	03L0284	04/30/03	05/22/03	05/31/03
ARSENIC, TOTAL	001	S	03L0284	04/30/03	05/22/03	05/31/03
ARSENIC, TOTAL	001 REP	S	03L0284	04/30/03	05/22/03	05/31/03
ARSENIC, TOTAL	001 MS	S	03L0284	04/30/03	05/22/03	05/31/03
BORON, TOTAL	001	S	03L0284	04/30/03	05/22/03	05/31/03
BORON, TOTAL	001 REP	S	03L0284	04/30/03	05/22/03	05/31/03
BORON, TOTAL	001 MS	S	03L0284	04/30/03	05/22/03	05/31/03
BARIUM, TOTAL	001	S	03L0284	04/30/03	05/22/03	05/31/03
BARIUM, TOTAL	001 REP	S	03L0284	04/30/03	05/22/03	05/31/03
BARIUM, TOTAL	001 MS	S	03L0284	04/30/03	05/22/03	05/31/03
BERYLLIUM, TOTAL	001	S	03L0284	04/30/03	05/22/03	05/31/03
BERYLLIUM, TOTAL	001 REP	S	03L0284	04/30/03	05/22/03	05/31/03
BERYLLIUM, TOTAL	001 MS	S	03L0284	04/30/03	05/22/03	05/31/03
BISMUTH, TOTAL	001	S	03L0284	04/30/03	05/22/03	05/31/03
BISMUTH, TOTAL REP	001 REP	S	03L0284	04/30/03	05/22/03	05/31/03
BISMUTH, TOTAL SPIKE	001 MS	S	03L0284	04/30/03	05/22/03	05/31/03
CADMIUM, TOTAL	001	S	03L0284	04/30/03	05/22/03	05/31/03
CADMIUM, TOTAL	001 REP	S	03L0284	04/30/03	05/22/03	05/31/03
CADMIUM, TOTAL	001 MS	S	03L0284	04/30/03	05/22/03	05/31/03
CHROMIUM, TOTAL	001	S	03L0284	04/30/03	05/22/03	05/31/03
CHROMIUM, TOTAL	001 REP	S	03L0284	04/30/03	05/22/03	05/31/03
CHROMIUM, TOTAL	001 MS	S	03L0284	04/30/03	05/22/03	05/31/03
COPPER, TOTAL	001	S	03L0284	04/30/03	05/22/03	05/31/03
COPPER, TOTAL	001 REP	S	03L0284	04/30/03	05/22/03	05/31/03
COPPER, TOTAL	001 MS	S	03L0284	04/30/03	05/22/03	05/31/03
MERCURY, TOTAL	001	S	03C0122	04/30/03	05/21/03	05/22/03
MERCURY, TOTAL	001 REP	S	03C0122	04/30/03	05/21/03	05/22/03
MERCURY, TOTAL	001 MS	S	03C0122	04/30/03	05/21/03	05/22/03
NICKEL, TOTAL	001	S	03L0284	04/30/03	05/22/03	05/31/03
NICKEL, TOTAL	001 REP	S	03L0284	04/30/03	05/22/03	05/31/03
NICKEL, TOTAL	001 MS	S	03L0284	04/30/03	05/22/03	05/31/03
LEAD, TOTAL	001	S	03L0284	04/30/03	05/22/03	05/31/03
LEAD, TOTAL	001 REP	S	03L0284	04/30/03	05/22/03	05/31/03

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2195

DATE RECEIVED: 05/03/03

LVL LOT # :0305L339

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
LEAD, TOTAL	001 MS	S	03L0284	04/30/03	05/22/03	05/31/03
ANTIMONY, TOTAL	001	S	03L0284	04/30/03	05/22/03	05/31/03
ANTIMONY, TOTAL	001 REP	S	03L0284	04/30/03	05/22/03	05/31/03
ANTIMONY, TOTAL	001 MS	S	03L0284	04/30/03	05/22/03	05/31/03
SELENIUM, TOTAL	001	S	03L0284	04/30/03	05/22/03	05/31/03
SELENIUM, TOTAL	001 REP	S	03L0284	04/30/03	05/22/03	05/31/03
SELENIUM, TOTAL	001 MS	S	03L0284	04/30/03	05/22/03	05/31/03

B16W85

SILVER, TOTAL	002	S	03L0284	04/30/03	05/22/03	05/31/03
ARSENIC, TOTAL	002	S	03L0284	04/30/03	05/22/03	05/31/03
BORON, TOTAL	002	S	03L0284	04/30/03	05/22/03	05/31/03
BARIUM, TOTAL	002	S	03L0284	04/30/03	05/22/03	05/31/03
BERYLLIUM, TOTAL	002	S	03L0284	04/30/03	05/22/03	05/31/03
BISMUTH, TOTAL	002	S	03L0284	04/30/03	05/22/03	05/31/03
CADMIUM, TOTAL	002	S	03L0284	04/30/03	05/22/03	05/31/03
CHROMIUM, TOTAL	002	S	03L0284	04/30/03	05/22/03	05/31/03
COPPER, TOTAL	002	S	03L0284	04/30/03	05/22/03	05/31/03
MERCURY, TOTAL	002	S	03C0122	04/30/03	05/21/03	05/22/03
NICKEL, TOTAL	002	S	03L0284	04/30/03	05/22/03	05/31/03
LEAD, TOTAL	002	S	03L0284	04/30/03	05/22/03	05/31/03
ANTIMONY, TOTAL	002	S	03L0284	04/30/03	05/22/03	05/31/03
SELENIUM, TOTAL	002	S	03L0284	04/30/03	05/22/03	05/31/03

LAB QC:

SILVER LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
SILVER, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
ARSENIC LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
ARSENIC, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
BORON LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
BORON, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
BARIUM LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
BARIUM, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
BERYLLIUM LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
BERYLLIUM, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
BISMUTH, LCS	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2195

DATE RECEIVED: 05/03/03

LVL LOT # :0305L339

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BISMUTH, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
CADMIUM LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
CADMIUM, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
CHROMIUM LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
CHROMIUM, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
COPPER LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
COPPER, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
MERCURY LABORATORY	LC1 BS	S	03C0122	N/A	05/21/03	05/22/03
MERCURY, TOTAL	MB1	S	03C0122	N/A	05/21/03	05/22/03
NICKEL LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
NICKEL, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
LEAD LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
LEAD, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
ANTIMONY LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
ANTIMONY, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
SELENIUM LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
SELENIUM, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2195

DATE RECEIVED: 05/07/03

LVL LOT # :0305L357

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W86						
SILVER, TOTAL	001	S	03L0284	05/05/03	05/22/03	05/30/03
ARSENIC, TOTAL	001	S	03L0284	05/05/03	05/22/03	05/30/03
BORON, TOTAL	001	S	03L0284	05/05/03	05/22/03	05/30/03
BARIUM, TOTAL	001	S	03L0284	05/05/03	05/22/03	05/30/03
BERYLLIUM, TOTAL	001	S	03L0284	05/05/03	05/22/03	05/30/03
BISMUTH, TOTAL	001	S	03L0284	05/05/03	05/22/03	05/30/03
CADMIUM, TOTAL	001	S	03L0284	05/05/03	05/22/03	05/30/03
CHROMIUM, TOTAL	001	S	03L0284	05/05/03	05/22/03	05/30/03
COPPER, TOTAL	001	S	03L0284	05/05/03	05/22/03	05/30/03
MERCURY, TOTAL	001	S	03C0122	05/05/03	05/21/03	05/22/03
NICKEL, TOTAL	001	S	03L0284	05/05/03	05/22/03	05/30/03
LEAD, TOTAL	001	S	03L0284	05/05/03	05/22/03	05/30/03
ANTIMONY, TOTAL	001	S	03L0284	05/05/03	05/22/03	05/30/03
SELENIUM, TOTAL	001	S	03L0284	05/05/03	05/22/03	05/30/03

LAB QC:

SILVER LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
SILVER, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
ARSENIC LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
ARSENIC, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
BORON LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
BORON, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
BARIUM LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
BARIUM, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
BERYLLIUM LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
BERYLLIUM, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
BISMUTH, LCS	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
BISMUTH, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
CADMIUM LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
CADMIUM, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
CHROMIUM LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
CHROMIUM, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
COPPER LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
COPPER, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2195

DATE RECEIVED: 05/07/03

LVL LOT # :0305L357

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MERCURY LABORATORY	LC1 BS	S	03C0122	N/A	05/21/03	05/22/03
MERCURY, TOTAL	MB1	S	03C0122	N/A	05/21/03	05/22/03
NICKEL LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
NICKEL, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
LEAD LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
LEAD, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
ANTIMONY LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
ANTIMONY, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
SELENIUM LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
SELENIUM, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2195

DATE RECEIVED: 05/08/03

LVL LOT # :0305L366

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W87						
SILVER, TOTAL	001	S	03L0284	05/06/03	05/22/03	05/30/03
ARSENIC, TOTAL	001	S	03L0284	05/06/03	05/22/03	05/30/03
BORON, TOTAL	001	S	03L0284	05/06/03	05/22/03	05/30/03
BARIUM, TOTAL	001	S	03L0284	05/06/03	05/22/03	05/30/03
BERYLLIUM, TOTAL	001	S	03L0284	05/06/03	05/22/03	05/30/03
BISMUTH, TOTAL	001	S	03L0284	05/06/03	05/22/03	05/30/03
CADMIUM, TOTAL	001	S	03L0284	05/06/03	05/22/03	05/30/03
CHROMIUM, TOTAL	001	S	03L0284	05/06/03	05/22/03	05/30/03
COPPER, TOTAL	001	S	03L0284	05/06/03	05/22/03	05/30/03
MERCURY, TOTAL	001	S	03C0122	05/06/03	05/21/03	05/22/03
NICKEL, TOTAL	001	S	03L0284	05/06/03	05/22/03	05/30/03
LEAD, TOTAL	001	S	03L0284	05/06/03	05/22/03	05/30/03
ANTIMONY, TOTAL	001	S	03L0284	05/06/03	05/22/03	05/30/03
SELENIUM, TOTAL	001	S	03L0284	05/06/03	05/22/03	05/30/03

LAB QC:

SILVER LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
SILVER, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
ARSENIC LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
ARSENIC, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
BORON LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
BORON, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
BARIUM LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
BARIUM, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
BERYLLIUM LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
BERYLLIUM, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
BISMUTH, LCS	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
BISMUTH, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
CADMIUM LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
CADMIUM, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
CHROMIUM LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
CHROMIUM, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
COPPER LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
COPPER, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2195

DATE RECEIVED: 05/08/03

LVL LOT # :0305L366

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MERCURY LABORATORY	LC1 BS	S	03C0122	N/A	05/21/03	05/22/03
MERCURY, TOTAL	MB1	S	03C0122	N/A	05/21/03	05/22/03
NICKEL LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
NICKEL, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
LEAD LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
LEAD, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
ANTIMONY LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
ANTIMONY, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
SELENIUM LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
SELENIUM, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2195

DATE RECEIVED: 05/09/03

LVL LOT # :0305L372

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W88						
SILVER, TOTAL	001	SO	03L0284	05/07/03	05/22/03	05/30/03
ARSENIC, TOTAL	001	SO	03L0284	05/07/03	05/22/03	05/30/03
BORON, TOTAL	001	SO	03L0284	05/07/03	05/22/03	05/30/03
BARIUM, TOTAL	001	SO	03L0284	05/07/03	05/22/03	05/30/03
BERYLLIUM, TOTAL	001	SO	03L0284	05/07/03	05/22/03	05/30/03
BISMUTH, TOTAL	001	SO	03L0284	05/07/03	05/22/03	05/30/03
CADMIUM, TOTAL	001	SO	03L0284	05/07/03	05/22/03	05/30/03
CHROMIUM, TOTAL	001	SO	03L0284	05/07/03	05/22/03	05/30/03
COPPER, TOTAL	001	SO	03L0284	05/07/03	05/22/03	05/30/03
MERCURY, TOTAL	001	SO	03C0122	05/07/03	05/21/03	05/22/03
NICKEL, TOTAL	001	SO	03L0284	05/07/03	05/22/03	05/30/03
LEAD, TOTAL	001	SO	03L0284	05/07/03	05/22/03	05/30/03
ANTIMONY, TOTAL	001	SO	03L0284	05/07/03	05/22/03	05/30/03
SELENIUM, TOTAL	001	SO	03L0284	05/07/03	05/22/03	05/30/03

LAB QC:

SILVER LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
SILVER, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
ARSENIC LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
ARSENIC, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
BORON LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
BORON, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
BARIUM LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
BARIUM, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
BERYLLIUM LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
BERYLLIUM, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
BISMUTH, LCS	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
BISMUTH, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
CADMIUM LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
CADMIUM, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
CHROMIUM LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
CHROMIUM, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
COPPER LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
COPPER, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2195

DATE RECEIVED: 05/09/03

LVL LOT # :0305L372

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MERCURY LABORATORY	LC1 BS	S	03C0122	N/A	05/21/03	05/22/03
MERCURY, TOTAL	MB1	S	03C0122	N/A	05/21/03	05/22/03
NICKEL LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
NICKEL, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
LEAD LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
LEAD, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
ANTIMONY LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
ANTIMONY, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
SELENIUM LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
SELENIUM, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03



Analytical Report

Client: TNU-HANFORD F03-006
LVL#: 0305L339, 357, 366, 372
SDG/SAF#: H2195/F03-006

W.O.#: 11343-606-001-9999-00
Date Received: 05-03, 07, 08, 09-03


METALS CASE NARRATIVE

1. This narrative covers the analyses of 5 soil samples.
2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary.
3. All analyses were performed within the required holding times.
4. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits.
6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the PQL).
7. All preparation/method blanks (MB) were within method criteria {less than the Practical Quantitation Limit (3X the IDL), MB value less than 5% of the RCRA limit, or samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.
8. All ICP Interference Check Standards were within control limits.
9. All laboratory control samples (LCS) were within the 80-120% control limits. Refer to the Inorganics Laboratory Control Standards Report.
10. The matrix spike (MS) recovery for 1 analyte was outside the 75-125% control limits. Refer to the Inorganics Accuracy Report.
11. For analytes where the ICP MS is out-of-control, a post-digestion MS (PDS) and serial dilution are performed. A serial dilution is performed for Mercury. A PDS was prepared at meaningful concentration level for the following analytes:

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of **35** pages.

<u>Sample ID</u>	<u>Element</u>	<u>PDS</u> <u>Concentration (ppb)</u>	<u>PDS</u> <u>% Recovery</u>
B16W84	Antimony	100	97.3

12. The duplicate analyses for 2 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.
13. For the purposes of this report, the data has been reported to the Instrument Detection Limit (IDL). Values between the IDL and the Practical Quantitation Limit (PQL) are acquired in a region of less-certain quantification.
14. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.


 Iain Daniels
 Laboratory Manager
 Lionville Laboratory Incorporated
 gmb/m05-339, 357, 366, 372

06-05-03
 Date

METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within this

Lot#: 0305 L339, 357, 366, 372

Leaching Procedure: 1310 1311 1312 Other:

CLP Metals Digestion and Analysis Methods: ILM03.0 ILM04.0

Metals Digestion Methods: 3005A 3010A 3015 3020A 3050B 3051 200.7 SS17
Other:

Metals Analysis Methods

	SW846	EPA	STD MTD	EPA OSWR	USATHAMA
Aluminum	6010B	200.7			99
Antimony	6010B 7041 ^s	200.7 204.2			99
Arsenic	6010B 7060A ^s	200.7 206.2	3113B		99
Barium	6010B	200.7			99
Beryllium	6010B	200.7			99
Bismuth	6010B ¹	200.7 ¹		1620	99
Boron	6010B	200.7			99
Cadmium	6010B 7131A ^s	200.7 213.2			99
Calcium	6010B	200.7			99
Chromium	6010B 7191 ^s	200.7 218.2			SS17
Cobalt	6010B	200.7			99
Copper	6010B 7211 ^s	200.7 220.2			99
Iron	6010B	200.7			99
Lead	6010B 7421 ^s	200.7 239.2	3113B		99
Lithium	6010B 7430 ⁴	200.7		1620	99
Magnesium	6010B	200.7			99
Manganese	6010B	200.7			99
Mercury	7470A ^s 7471A ^s	245.1 ² 245.5 ²			99
Molybdenum	6010B	200.7			99
Nickel	6010B	200.7			99
Potassium	6010B 7610 ⁴	200.7 258.1 ⁴			99
Rare Earths	6010B ¹	200.7 ¹		1620	99
Selenium	6010B 7740 ^s	200.7 270.2	3113B		99
Silicon	6010B ¹	200.7		1620	99
Silica	6010B	200.7		1620	99
Silver	6010B 7761 ^s	200.7 272.2			99
Sodium	6010B 7770 ⁴	200.7 273.1 ⁴			99
Strontium	6010B	200.7			99
Thallium	6010B 7841 ^s	200.7 279.2 200.9			99
Tin	6010B	200.7			99
Titanium	6010B	200.7			99
Uranium	6010B ¹	200.7 ¹		1620	99
Vanadium	6010B	200.7			99
Zinc	6010B	200.7			99
Zirconium	6010B ¹	200.7 ¹		1620	99

Other: _____

Method: _____

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

* = Indicates that the original sample result is greater than 4x the spike amount added.

ABBREVIATIONS

MB = Method or Preparation Blank.
MS = Matrix Spike.
MSD = Matrix Spike Duplicate.
REP = Sample Replicate
LCS = Laboratory Control Sample.
NC = Not calculated.

ANALYTICAL METAL METHODS

1. Not included in the method element list.
2. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, approximately 0.3 grams of sample is taken to a final volume of 50 mL (including all reagents).
3. Flame AA.
4. Graphite Furnace AA.

L-WI-033/N-04/98

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 06/04/03

CLIENT: TNUHANFORD F03-006 H2195

LVL LOT #: 0305L339

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
=====	=====	=====	=====	=====	=====	=====
-001	B16W84	Silver, Total	0.13 u	MG/KG	0.13	1.0
		Arsenic, Total	2.0	MG/KG	0.35	1.0
		Boron, Total	0.57	MG/KG	0.20	1.0
		Barium, Total	108	MG/KG	0.02	1.0
		Beryllium, Total	0.38	MG/KG	0.01	1.0
		Bismuth, Total	0.54 u	MG/KG	0.54	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	6.3	MG/KG	0.11	1.0
		Copper, Total	17.2	MG/KG	0.06	1.0
		Mercury, Total	0.02	MG/KG	0.02	1.0
		Nickel, Total	8.4	MG/KG	0.14	1.0
		Lead, Total	3.7	MG/KG	0.24	1.0
		Antimony, Total	0.23 u	MG/KG	0.23	1.0
		Selenium, Total	0.45 u	MG/KG	0.45	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 06/04/03

CLIENT: TNUHANFORD F03-006 H2195

LVL LOT #: 0305L339

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
=====	=====	=====	=====	=====	=====	=====
-002	B16W85	Silver, Total	0.12 u	MG/KG	0.12	1.0
		Arsenic, Total	2.8	MG/KG	0.34	1.0
		Boron, Total	0.47	MG/KG	0.20	1.0
		Barium, Total	123	MG/KG	0.02	1.0
		Beryllium, Total	0.39	MG/KG	0.01	1.0
		Bismuth, Total	0.53 u	MG/KG	0.53	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	7.8	MG/KG	0.10	1.0
		Copper, Total	16.5	MG/KG	0.06	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Nickel, Total	14.3	MG/KG	0.13	1.0
		Lead, Total	4.1	MG/KG	0.24	1.0
		Antimony, Total	0.36	MG/KG	0.23	1.0
		Selenium, Total	0.43 u	MG/KG	0.43	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 06/04/03

CLIENT: TNUHANFORD F03-006 H2195

LVL LOT #: 0305L357

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
=====	=====	=====	=====	=====	=====	=====
-001	B16W86	Silver, Total	0.12 u	MG/KG	0.12	1.0
		Arsenic, Total	2.7	MG/KG	0.33	1.0
		Boron, Total	0.94	MG/KG	0.19	1.0
		Barium, Total	63.2	MG/KG	0.02	1.0
		Beryllium, Total	0.33	MG/KG	0.01	1.0
		Bismuth, Total	0.52 u	MG/KG	0.52	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	10.2	MG/KG	0.10	1.0
		Copper, Total	9.7	MG/KG	0.06	1.0
		Mercury, Total	0.02	MG/KG	0.02	1.0
		Nickel, Total	8.9	MG/KG	0.13	1.0
		Lead, Total	3.3	MG/KG	0.23	1.0
		Antimony, Total	0.23	MG/KG	0.22	1.0
		Selenium, Total	0.43 u	MG/KG	0.43	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 06/04/03

CLIENT: TNUHANFORD F03-006 H2195

LVL LOT #: 0305L366

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING	DILUTION
					LIMIT	FACTOR
=====	=====	=====	=====	=====	=====	=====
-001	B16W87	Silver, Total	0.12 u	MG/KG	0.12	1.0
		Arsenic, Total	1.4	MG/KG	0.34	1.0
		Boron, Total	0.67	MG/KG	0.19	1.0
		Barium, Total	44.9	MG/KG	0.02	1.0
		Beryllium, Total	0.29	MG/KG	0.01	1.0
		Bismuth, Total	0.52 u	MG/KG	0.52	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	23.5	MG/KG	0.10	1.0
		Copper, Total	8.5	MG/KG	0.06	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Nickel, Total	17.1	MG/KG	0.13	1.0
		Lead, Total	2.3	MG/KG	0.23	1.0
		Antimony, Total	0.22 u	MG/KG	0.22	1.0
		Selenium, Total	0.43 u	MG/KG	0.43	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 06/04/03

CLIENT: TNUHANFORD F03-006 H2195

LVL LOT #: 0305L372

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-----	-----	-----	-----	-----	-----	-----
-001	B16W88	Silver, Total	0.1	u MG/KG	0.1	1.0
		Arsenic, Total	1.8	MG/KG	0.27	1.0
		Boron, Total	0.66	MG/KG	0.16	1.0
		Barium, Total	53.8	MG/KG	0.02	1.0
		Beryllium, Total	0.26	MG/KG	0.008	1.0
		Bismuth, Total	0.42	u MG/KG	0.42	1.0
		Cadmium, Total	0.03	u MG/KG	0.03	1.0
		Chromium, Total	10.6	MG/KG	0.08	1.0
		Copper, Total	12.0	MG/KG	0.05	1.0
		Mercury, Total	0.02	u MG/KG	0.02	1.0
		Nickel, Total	7.7	MG/KG	0.11	1.0
		Lead, Total	13.1	MG/KG	0.19	1.0
		Antimony, Total	1.5	MG/KG	0.18	1.0
		Selenium, Total	0.34	u MG/KG	0.34	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 06/04/03

CLIENT: TNUHANFORD F03-006 H2195

LVL LOT #: 0305L339, 357, 366, 372

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
*****	*****	*****	*****	*****	*****	*****
BLANK1	03L0284-MB1	Silver, Total	0.12 u	MG/KG	0.12	1.0
		Arsenic, Total	0.33 u	MG/KG	0.33	1.0
		Boron, Total	0.19 u	MG/KG	0.19	1.0
		Barium, Total	0.03	MG/KG	0.02	1.0
		Beryllium, Total	0.02	MG/KG	0.01	1.0
		Bismuth, Total	0.51 u	MG/KG	0.51	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	0.10 u	MG/KG	0.10	1.0
		Copper, Total	0.06 u	MG/KG	0.06	1.0
		Nickel, Total	0.13 u	MG/KG	0.13	1.0
		Lead, Total	0.23 u	MG/KG	0.23	1.0
		Antimony, Total	0.22 u	MG/KG	0.22	1.0
		Selenium, Total	0.42 u	MG/KG	0.42	1.0
BLANK1	03C0122-MB1	Mercury, Total	0.02 u	MG/KG	0.02	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 06/04/03

CLIENT: TNUHANFORD F03-006 H2195

LVL LOT #: 0305L339

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
=====	=====	=====	=====	=====	=====	=====	=====
-001	B16W84	Silver, Total	4.9	0.13u	5.3	92.5	1.0
		Arsenic, Total	192	2.0	210	90.6	1.0
		Boron, Total	93.0	0.57	105	88.0	1.0
		Barium, Total	332	108	210	106.8	1.0
		Beryllium, Total	5.1	0.38	5.3	89.1	1.0
		Bismuth, Total	488	0.54u	525	92.9	1.0
		Cadmium, Total	4.8	0.04u	5.3	90.6	1.0
		Chromium, Total	26.3	6.3	21.0	95.2	1.0
		Copper, Total	42.5	17.2	26.3	96.2	1.0
		Mercury, Total	0.19	0.02	0.18	94.9	1.0
		Nickel, Total	56.8	8.4	52.5	92.2	1.0
		Lead, Total	51.5	3.7	52.5	91.0	1.0
		Antimony, Total	31.1	0.23u	52.5	59.2	1.0
		Selenium, Total	182	0.45u	210	86.8	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 06/04/03

CLIENT: TNUHANFORD F03-006 H2195

LVL LOT #: 0305L339

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	INITIAL	REPLICATE RPD		DILUTION FACTOR (REP)
			RESULT			
=====	=====	=====	=====	=====	=====	=====
-001REP	B16W84	Silver, Total	0.13u	0.13u	NC	1.0
		Arsenic, Total	2.0	2.4	18.2	1.0
		Boron, Total	0.57	0.26	75.2	1.0
		Barium, Total	108	130	18.8	1.0
		Beryllium, Total	0.38	0.36	4.6	1.0
		Bismuth, Total	0.54u	0.54u	NC	1.0
		Cadmium, Total	0.04u	0.04u	NC	1.0
		Chromium, Total	6.3	5.3	17.2	1.0
		Copper, Total	17.2	16.2	6.0	1.0
		Mercury, Total	0.02	0.02u	NC 2.00	1.0
		Nickel, Total	8.4	8.8	4.7	1.0
		Lead, Total	3.7	3.8	2.7	1.0
		Antimony, Total	0.23u	0.23u	NC	1.0
		Selenium, Total	0.45u	0.45u	NC	1.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 06/04/03

CLIENT: TNUHANFORD F03-006 H2195

LVL LOT #: 0305L339, 357, 366, 372

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	03L0284-LC1	Silver, LCS	49.1	50.0	MG/KG	98.2
		Arsenic, LCS	931	1000	MG/KG	93.1
		Boron, LCS	471	500	MG/KG	94.2
		Barium, LCS	505	500	MG/KG	100.9
		Beryllium, LCS	24.2	25.0	MG/KG	96.8
		Bismuth, LCS	491	500	MG/KG	98.2
		Cadmium, LCS	24.6	25.0	MG/KG	98.4
		Chromium, LCS	50.6	50.0	MG/KG	101.2
		Copper, LCS	127	125	MG/KG	101.8
		Nickel, LCS	200	200	MG/KG	99.9
		Lead, LCS	243	250	MG/KG	97.4
		Antimony, LCS	291	300	MG/KG	97.0
		Selenium, LCS	890	1000	MG/KG	89.0
LCS1	03C0122-LC1	Mercury, LCS	6.8	6.2	MG/KG	109.8

Lionville Laboratory Use Only

Custody Transfer Record/Lab Work Request Page 1 of 1

Page 1 of 1



IVL

MONVILLE LABORATORY INC.

0305L339

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

A B C

[illegible]

Special instructions: SAE # F03-026

~~From Metrics to GC~~

Batch QC for 1339, 357, 366, 372

DATE/REVISIONS:

5-1403

1 Per Client Due Date : 6-(6-0)

2. $Al, Ag, As, B, Ba, Be, Bi, Cd, Cr, Cu, Hg,$

3. $N, Pb, Sb, Se / Ic: Cl, F, NO_2, NO, PO_4, SO_4$

4. INH3N, IPH, 0624H, 0625x, 06CSC, 0PFB

5. ODRO, IGRO

6. _____

Received	Date
----------	------

Lionville Laboratory Use Only

Samples were:

1) Shipped ☒ or
Hand Delivered ☐

Airbill # 76-71689 3774

2) Ambient or Chilled

3) Received in Good Condition ☒ or No ☐

4) Samples

☐ Properly Preserved ☒ (1) or N

5) Received Within Holding Times

Y or N

Tamper Resistant Seal was:

1) Present on Outer
Package ☒ or N

2) Unbroken on Outer Package (Y) or N

3) Present on Sample
(Y) or N

4) Unbroken on

Sample (Y) or N
COC Record Pres

Upon Sample Rec't
(Y) or N

Cooler Temp 0.6 °C

Temp. _____

Relinquished by	Received by	Date	Time
Deed Ex	[Signature]	5-3-03	11:00

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL REWRITTEN		

Discrepancies Between
Samples Labels and
COC Record? Y or N

FH-Central Plateau Project			CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-67		Page 1 of 1		
Collector Johansen/Pope/Pfister			Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling			Sampling Location 216-A-37 (C4106); (72.5'-75')			SAF No. F03-006		Air Quality <input type="checkbox"/>				
Ice Chest No. ERC-01-038			Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To RELA EBERLINE SERVICES (Formerly TMA) <i>ASL 4/14/03</i>			Offsite Property No. 1030221				Bill of Lading/Air Bill No. SEE OSA					
POSSIBLE SAMPLE HAZARDS/REMARKS <i>Radioactive</i> Tie TO B16WDO Special Handling and/or Storage COB 14°L				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None			
				Type of Container	aG	aG	aG	aG	aG			
				No. of Container(s)	1	1	1	1	1			
				Volume	120mL	60mL	120mL	60mL	60mL			
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions.	Tritium - H3				
									<i>Tie TO!</i>			
Sample No.	Matrix *	Sample Date	Sample Time									
B16W84	SOIL	4-30-03	0900	X	X	X					<i>B16WDO</i>	
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS <i>ASL 4/22/03</i> ** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (1)-Technetium-99, Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 <i>ASL 4/22/03</i>				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
<i>RELA</i>		4-30-03 1430		<i>R. G. Hill</i>		4-30-03 1430						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
<i>R. G. Hill</i>		4-30-03 1430		<i>IB</i>		4-30-03 1430						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
<i>IB</i>		5-2-03 1000		<i>R. G. Hill</i>		5-2-03 1000						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
<i>R. G. Hill</i>		5-2-03 1000		<i>FedEx</i>								
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
<i>Greg Cox</i>		5-3-03 11:00		<i>Smith</i>		5-3-03 11:00						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
LABORATORY SECTION		Received By				Title				Date/Time		
FINAL SAMPLE DISPOSITION		Disposal Method				Disposed By				Date/Time		

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-68		Page 1 of 1					
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days				
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (97.5'-100')		SAF No. F03-006		Air Quality <input type="checkbox"/>								
Ice Chest No. ERC 01-038		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express								
Shipped To BERLINE SERVICES (Formerly TMA)		Offsite Property No. A030 ZZ1		Bill of Lading/Air Bill No. SEF 05PC										
POSSIBLE SAMPLE HAZARDS/REMARKS Radioactive Tc-99 B16WD1 Special Handling and/or Storage cool 40C				Preservation		Cool 4C	Cool 4C	Cool 4C	None	None				
				Type of Container		aG	aG	aG	aG	aG				
				No. of Container(s)		1	1	1	1	1				
				Volume		120mL	60mL	120mL	60mL	60mL				
				SAMPLE ANALYSIS		Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions	Tritium - H3				
Sample No.	Matrix *	Sample Date	Sample Time											
B16W85	SOIL	4-30-03	1238	X	X	X	/				B16WD1			
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (1) Technetium-99, Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 4/22/03 952						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time								
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time								
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time								
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time								
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time								
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Matrix *						
LABORATORY SECTION		Received By		Title				Date/Time						
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time						

LIONVILLE LABORATORY INCORPORATED

SAMPLE RECEIPT CHECKLIST

Client: TWU Hartford

Purchase Order/Project:

DATE: 5.3.03

RF# / SOW# / Release #: F03.006

Laboratory SDG #:

0305L339

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | | | | |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets LyLI Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

ERC 01-038 / 0.6 °C

Laboratory Sample Custodian:

J. Smith

Laboratory Project Manager:

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS[illegible]

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-006-69		Page 1 of 1				
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N Data Turnaround 45 Days				
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (147.5'-150')		SAF No. F03-006		Air Quality <input type="checkbox"/>						
Ice Chest No. FERC-01-063		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express						
Shipped To EDERLINE SERVICES (Formerly TMA) 4/22/03		Offsite Property No. A030 222		Bill of Lading/Air Bill No. SEE OSPL								
POSSIBLE SAMPLE HAZARDS/REMARKS Radioactive Tie To B16WDO Special Handling and/or Storage cool 4°C				Preservation		Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container		aG	aG	aG	aG	aG		
				No. of Container(s)		1	1	1	1	1		
				Volume		120mL	60mL	120mL	60mL	60mL		
						Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions	Tritium - H3		
SAMPLE ANALYSIS												
Sample No.	Matrix *	Sample Date	Sample Time									
B16W86	SOIL	5/5/3	0900	X	X	X			Tie To: B16WDO B16WDO			
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (+) Technetium-99; Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 Personnel not available to relinquish samples from the 3728 Ref # 1A on 5/16/03				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
LABORATORY SECTION		Received By		Title		Date/Time						
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time						

LIONVILLE LABORATORY INCORPORATED

SAMPLE RECEIPT CHECKLIST

Client: TNU Hanford
 Purchase Order/Project:

DATE: 5.7.03

File # / SOW# / Release #: FO3-006

Laboratory SDG #:

03054357

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | | | | |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets LVL1 Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

EEC-01-063 / 2.3"

Laboratory Sample Custodian:

Laboratory Project Manager:

[Signature]

Lionville Laboratory Use Only

Custody Transfer Record/Lab Work Request Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

0305L366

[illegible]

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-70		Page 1 of 1				
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days			
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (197.5'-200')				SAF No. F03-006		Air Quality <input type="checkbox"/>					
Ice Chest No. ERC 99-022		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express							
Shipped To REDA BERLINE SERVICES (Formerly TMA) AS 4/22/03		Offsite Property No. A030 222				Bill of Lading/Air Bill No. SEE B3PC							
POSSIBLE SAMPLE HAZARDS/REMARKS Radioactive Tie To B16WDO Special Handling and/or Storage COOL 4°C				Preservation		Cool 4C	Cool 4C	Cool 4C	None	None			
				Type of Container		aG	aG	aG	aG	aG			
				No. of Container(s)		1	1	1	1	1			
				Volume		120mL	60mL	120mL	60mL	60mL			
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions	Tritium - H3					
Sample No.		Matrix *		Sample Date		Sample Time							
B16W87		SOIL		5/6/03		0945		Tie To: B16WDO					
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS 792 4/22/03 **The laboratory is to achieve a detection limit of 30.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (1) Technetium-99; Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 792 4/22/03 Personnel not available to relinquish samples from the 3728 Ref #1A on 5/7/03					
Relinquished By/Removed From 4/24 Date/Time 5/6/03 1000		Received By/Stored In REF 1A 3728 Date/Time 5/6/03 1100											
Relinquished By/Removed From 1A 3728 Date/Time 5-7-03		Received By/Stored In REF 1A 3728 Date/Time 5-7-03											
Relinquished By/Removed From ERC Date/Time 1000		Received By/Stored In ERC Date/Time 1000											
Relinquished By/Removed From REF 1A 3728 Date/Time 5-7-03		Received By/Stored In REF 1A 3728 Date/Time 5-7-03											
Relinquished By/Removed From REF 1A 3728 Date/Time 5-8-03 10:00		Received By/Stored In REF 1A 3728 Date/Time 5-8-03 10:00											
Relinquished By/Removed From		Received By/Stored In		Date/Time		Date/Time							
Relinquished By/Removed From		Received By/Stored In		Date/Time		Date/Time							
Relinquished By/Removed From		Received By/Stored In		Date/Time		Date/Time							
Relinquished By/Removed From		Received By/Stored In		Date/Time		Date/Time							
LABORATORY SECTION		Received By				Title				Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method				Disposed By				Date/Time			

LIONVILLE LABORATORY INCORPORATED

SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hanford

Purchase Order/Project:

DATE: 5-8-03

AF# / SOW# / Release #: F03-006

Laboratory SDG #:

0305L366

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | | | | |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets LVLJ Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

ERC 99-022 / 2.0°C

Laboratory Sample Custodian:

[Signature]

Laboratory Project Manager:

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						F03-006-71		Page 1 of 1	
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (237.5'-240')		SAF No. F03-006		Air Quality <input type="checkbox"/>					
Ice Chest No. ERC-01-040		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To REIRA ERERLINE SERVICES (Formerly TMA) 9/22/03		Offsite Property No.		Bill of Lading/Air Bill No. See OSEP							
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container	aG	aG	aG	aG	aG		
				No. of Container(s)	1	1	1	1	1		
				Volume	120mL	60mL	120mL	60mL	60mL		
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions	Tritium - H3			
Sample No.	Matrix *	Sample Date	Sample Time								
B16W88	SOIL	5-7-03	1050	X	X	X					BIUWDO
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS			
Relinquished By/Removed From [Signature] 5/7/03 1440		Received By/Stored In SJOALE [Signature] 5/7/03 1440		**The laboratory is to achieve a detection limit of 30.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.							
Relinquished By/Removed From SJOALE [Signature] 5/7/03 1440		Received By/Stored In REF 1B 3728 5/7/03 1440		(1) Technetium-99; Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 9/22/03							
Relinquished By/Removed From 3728 REF 1B 5/8/03 0830		Received By/Stored In [Signature] 5/8/03 0830		Personnel not available to relinquish samples from the 3728 Ref # 1B on 5/8/03							
Relinquished By/Removed From [Signature] 5/8/03 0830		Received By/Stored In FEDEX									
Relinquished By/Removed From FEDEX 5-9-03 0930		Received By/Stored In [Signature] 5-9-03 0930									
Relinquished By/Removed From		Received By/Stored In									
LABORATORY SECTION		Received By		Title				Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time			

34

LIONVILLE LABORATORY INCORPORATED

SAMPLE RECEIPT CHECKLIST

Client: TNU Hanford

Phase Order/Project:

DATE: 5-9-03

Job/SOW# / Release #: F03-006

Laboratory SDG #: 03056372

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

1. Custody seals on coolers or shipping container intact, signed and dated?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	<input type="checkbox"/> see Comment #
2. Outside of coolers or shipping containers are free from damage?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	<input type="checkbox"/> see Comment #
3. Airbill # recorded?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	<input type="checkbox"/> see Comment #
4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	<input type="checkbox"/> see Comment #
5. Sample containers are intact?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	<input type="checkbox"/> see Comment #
6. Custody seals on sample containers intact, signed and dated?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	<input type="checkbox"/> see Comment #
7. All samples on coc received?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	<input type="checkbox"/> see Comment #
8. All sample label information matches coc?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	<input type="checkbox"/> see Comment #
9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	<input type="checkbox"/> see Comment #
10. Shipment meets LVLJ Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	<input type="checkbox"/> see Comment #
11. Where applicable, bar code labels are affixed to coc?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A	<input type="checkbox"/> see Comment #
12. coc signed and dated?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	<input type="checkbox"/> see Comment #
13. coc will be faxed or emailed to client?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	<input type="checkbox"/> see Comment #
14. Project Manager/Client contacted concerning discrepancies? (name/date)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A	<input type="checkbox"/> see Comment #

Cooler # / temp (°C) and Comments:

1.5°
RC 01-040

Laboratory Sample Custodian:

Laboratory Project Manager:

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2195



DATE RECEIVED: 05/03/03

LVL LOT # :0305L339

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
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B16W84

% SOLIDS	001	S	03L*S062	04/30/03	05/06/03	05/07/03
CHLORIDE BY IC	001	S	03LIC032	04/30/03	05/21/03	05/21/03
CHLORIDE BY IC	001 REP	S	03LIC032	04/30/03	05/21/03	05/21/03
CHLORIDE BY IC	001 MS	S	03LIC032	04/30/03	05/21/03	05/21/03
FLUORIDE BY IC	001	S	03LIC032	04/30/03	05/21/03	05/21/03
FLUORIDE BY IC	001 REP	S	03LIC032	04/30/03	05/21/03	05/21/03
FLUORIDE BY IC	001 MS	S	03LIC032	04/30/03	05/21/03	05/21/03
NITRITE BY IC	001	S	03LIC032	04/30/03	05/21/03	05/21/03
NITRITE BY IC	001 REP	S	03LIC032	04/30/03	05/21/03	05/21/03
NITRITE BY IC	001 MS	S	03LIC032	04/30/03	05/21/03	05/21/03
NITRATE BY IC	001	S	03LIC032	04/30/03	05/21/03	05/21/03
NITRATE BY IC	001 REP	S	03LIC032	04/30/03	05/21/03	05/21/03
NITRATE BY IC	001 MS	S	03LIC032	04/30/03	05/21/03	05/21/03
TOTAL CYANIDE	001	S	03LCA45	04/30/03	05/19/03	05/19/03
PHOSPHATE BY IC	001	S	03LIC032	04/30/03	05/21/03	05/21/03
PHOSPHATE BY IC	001 REP	S	03LIC032	04/30/03	05/21/03	05/21/03
PHOSPHATE BY IC	001 MS	S	03LIC032	04/30/03	05/21/03	05/21/03
CHROMIUM VI	001	S	03LVI041	04/30/03	05/07/03	05/07/03
SULFATE BY IC	001	S	03LIC032	04/30/03	05/21/03	05/21/03
SULFATE BY IC	001 REP	S	03LIC032	04/30/03	05/21/03	05/21/03
SULFATE BY IC	001 MS	S	03LIC032	04/30/03	05/21/03	05/21/03
NITRATE NITRITE	001	S	03LN3B26	04/30/03	05/19/03	05/19/03
NITRATE NITRITE	001 REP	S	03LN3B26	04/30/03	05/19/03	05/19/03
NITRATE NITRITE	001 MS	S	03LN3B26	04/30/03	05/19/03	05/19/03
AMMONIA	001	S	03LAMA14	04/30/03	05/24/03	05/26/03
OIL & GREASE BY GRAV	001	S	03LOG020	04/30/03	05/21/03	05/22/03
OIL AND GREASE BY GR	001 REP	S	03LOG020	04/30/03	05/21/03	05/22/03
OIL AND GREASE BY GR	001 MS	S	03LOG020	04/30/03	05/21/03	05/22/03
PH	001	S	03LPH035	04/30/03	05/20/03	05/20/03
PH	001 REP	S	03LPH035	04/30/03	05/20/03	05/20/03

B16W85

% SOLIDS	002	S	03L*S062	04/30/03	05/06/03	05/07/03
% SOLIDS	002 REP	S	03L*S062	04/30/03	05/06/03	05/07/03

Lionville Laboratory, Inc.
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TNUHANFORD F03-006 H2195

DATE RECEIVED: 05/03/03

LVL LOT # :0305L339

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CHLORIDE BY IC	002	S	03LIC032	04/30/03	05/21/03	05/21/03
FLUORIDE BY IC	002	S	03LIC032	04/30/03	05/21/03	05/21/03
NITRITE BY IC	002	S	03LIC032	04/30/03	05/21/03	05/21/03
NITRATE BY IC	002	S	03LIC032	04/30/03	05/21/03	05/21/03
TOTAL CYANIDE	002	S	03LCA45	04/30/03	05/19/03	05/19/03
PHOSPHATE BY IC	002	S	03LIC032	04/30/03	05/21/03	05/21/03
CHROMIUM VI	002	S	03LVI041	04/30/03	05/07/03	05/07/03
CHROMIUM VI	002 REP	S	03LVI041	04/30/03	05/07/03	05/07/03
CHROMIUM VI	002 MS	S	03LVI041	04/30/03	05/07/03	05/07/03
CHROMIUM VI	002 MSD	S	03LVI041	04/30/03	05/07/03	05/07/03
SULFATE BY IC	002	S	03LIC032	04/30/03	05/21/03	05/21/03
NITRATE NITRITE	002	S	03LN3B26	04/30/03	05/19/03	05/19/03
AMMONIA	002	S	03LAMA14	04/30/03	05/24/03	05/26/03
AMMONIA	002 REP	S	03LAMA14	04/30/03	05/24/03	05/26/03
AMMONIA	002 MS	S	03LAMA14	04/30/03	05/24/03	05/26/03
OIL & GREASE BY GRAV	002	S	03LOG020	04/30/03	05/21/03	05/22/03
PH	002	S	03LPH035	04/30/03	05/20/03	05/20/03

LAB QC:

CHLORIDE BY IC	MB1	S	03LIC032	N/A	05/21/03	05/21/03
CHLORIDE BY IC	MB1 BS	S	03LIC032	N/A	05/21/03	05/21/03
FLUORIDE BY IC	MB1	S	03LIC032	N/A	05/21/03	05/21/03
FLUORIDE BY IC	MB1 BS	S	03LIC032	N/A	05/21/03	05/21/03
NITRITE BY IC	MB1	S	03LIC032	N/A	05/21/03	05/21/03
NITRITE BY IC	MB1 BS	S	03LIC032	N/A	05/21/03	05/21/03
NITRATE BY IC	MB1	S	03LIC032	N/A	05/21/03	05/21/03
NITRATE BY IC	MB1 BS	S	03LIC032	N/A	05/21/03	05/21/03
TOTAL CYANIDE	LCS L	S	03LCA45	N/A	05/19/03	05/19/03
TOTAL CYANIDE	LCS L	S	03LCA45	N/A	05/19/03	05/19/03
TOTAL CYANIDE	MB1	S	03LCA45	N/A	05/19/03	05/19/03
PHOSPHATE BY IC	MB1	S	03LIC032	N/A	05/21/03	05/21/03
PHOSPHATE BY IC	MB1 BS	S	03LIC032	N/A	05/21/03	05/21/03
CHROMIUM VI	MB1	S	03LVI041	N/A	05/07/03	05/07/03
CHROMIUM VI	MB1 BS	S	03LVI041	N/A	05/07/03	05/07/03
CHROMIUM VI	MB1 BSD	S	03LVI041	N/A	05/07/03	05/07/03
SULFATE BY IC	MB1	S	03LIC032	N/A	05/21/03	05/21/03
SULFATE BY IC	MB1 BS	S	03LIC032	N/A	05/21/03	05/21/03

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2195

DATE RECEIVED: 05/03/03

LVL LOT # :0305L339

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
NITRATE NITRITE	MB1	S	03LN3B26	N/A	05/19/03	05/19/03
NITRATE NITRITE	MB1 BS	S	03LN3B26	N/A	05/19/03	05/19/03
AMMONIA	MB1	S	03LAMA14	N/A	05/24/03	05/26/03
AMMONIA	MB1 BS	S	03LAMA14	N/A	05/24/03	05/26/03
AMMONIA	MB1 BSD	S	03LAMA14	N/A	05/24/03	05/26/03
OIL & GREASE BY GRAV	MB1	S	03LOG020	N/A	05/21/03	05/22/03
OIL AND GREASE BY GR	MB1 BS	S	03LOG020	N/A	05/21/03	05/22/03
OIL AND GREASE BY GR	MB1 BSD	S	03LOG020	N/A	05/21/03	05/22/03

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2195

DATE RECEIVED: 05/07/03

LVL LOT # :0305L357

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W86						
% SOLIDS	001	S	03L%S063	05/05/03	05/07/03	05/08/03
% SOLIDS	001 REP	S	03L%S063	05/05/03	05/07/03	05/08/03
CHLORIDE BY IC	001	S	03LIC032	05/05/03	05/21/03	05/21/03
FLUORIDE BY IC	001	S	03LIC032	05/05/03	05/21/03	05/21/03
NITRITE BY IC	001	S	03LIC032	05/05/03	05/21/03	05/21/03
NITRATE BY IC	001	S	03LIC032	05/05/03	05/21/03	05/21/03
TOTAL CYANIDE	001	S	03LC045	05/05/03	05/19/03	05/19/03
PHOSPHATE BY IC	001	S	03LIC032	05/05/03	05/21/03	05/21/03
CHROMIUM VI	001	S	03LVI043	05/05/03	05/14/03	05/14/03
SULFATE BY IC	001	S	03LIC032	05/05/03	05/21/03	05/21/03
NITRATE NITRITE	001	S	03LN3A27	05/05/03	05/22/03	05/22/03
AMMONIA	001	S	03LAMA14	05/05/03	05/24/03	05/26/03
OIL & GREASE BY GRAV	001	S	03LOG020	05/05/03	05/21/03	05/22/03
PH	001	S	03LPH035	05/05/03	05/20/03	05/20/03

LAB QC:

CHLORIDE BY IC	MB1	S	03LIC032	N/A	05/21/03	05/21/03
CHLORIDE BY IC	MB1 BS	S	03LIC032	N/A	05/21/03	05/21/03
FLUORIDE BY IC	MB1	S	03LIC032	N/A	05/21/03	05/21/03
FLUORIDE BY IC	MB1 BS	S	03LIC032	N/A	05/21/03	05/21/03
NITRITE BY IC	MB1	S	03LIC032	N/A	05/21/03	05/21/03
NITRITE BY IC	MB1 BS	S	03LIC032	N/A	05/21/03	05/21/03
NITRATE BY IC	MB1	S	03LIC032	N/A	05/21/03	05/21/03
NITRATE BY IC	MB1 BS	S	03LIC032	N/A	05/21/03	05/21/03
TOTAL CYANIDE	LCS L	S	03LC045	N/A	05/19/03	05/19/03
TOTAL CYANIDE	LCS L	S	03LC045	N/A	05/19/03	05/19/03
TOTAL CYANIDE	MB1	S	03LC045	N/A	05/19/03	05/19/03
PHOSPHATE BY IC	MB1	S	03LIC032	N/A	05/21/03	05/21/03
PHOSPHATE BY IC	MB1 BS	S	03LIC032	N/A	05/21/03	05/21/03
CHROMIUM VI	MB1	S	03LVI043	N/A	05/14/03	05/14/03
CHROMIUM VI	MB1 BS	S	03LVI043	N/A	05/14/03	05/14/03
CHROMIUM VI	MB1 BSD	S	03LVI043	N/A	05/14/03	05/14/03
SULFATE BY IC	MB1	S	03LIC032	N/A	05/21/03	05/21/03
SULFATE BY IC	MB1 BS	S	03LIC032	N/A	05/21/03	05/21/03

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2195

DATE RECEIVED: 05/07/03

LVL LOT # :0305L357

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
NITRATE NITRITE	MB1	S	03LN3A27	N/A	05/22/03	05/22/03
NITRATE NITRITE	MB1 BS	S	03LN3A27	N/A	05/22/03	05/22/03
AMMONIA	MB1	S	03LAMA14	N/A	05/24/03	05/26/03
AMMONIA	MB1 BS	S	03LAMA14	N/A	05/24/03	05/26/03
AMMONIA	MB1 BSD	S	03LAMA14	N/A	05/24/03	05/26/03
OIL & GREASE BY GRAV	MB1	S	03LOG020	N/A	05/21/03	05/22/03
OIL AND GREASE BY GR	MB1 BS	S	03LOG020	N/A	05/21/03	05/22/03
OIL AND GREASE BY GR	MB1 BSD	S	03LOG020	N/A	05/21/03	05/22/03

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2195

DATE RECEIVED: 05/08/03

LVL LOT # :0305L366

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W87						
% SOLIDS	001	S	03L*S064	05/06/03	05/09/03	05/12/03
% SOLIDS	001 REP	S	03L*S064	05/06/03	05/09/03	05/12/03
CHLORIDE BY IC	001	S	03LIC032	05/06/03	05/21/03	05/21/03
FLUORIDE BY IC	001	S	03LIC032	05/06/03	05/21/03	05/21/03
NITRITE BY IC	001	S	03LIC032	05/06/03	05/21/03	05/21/03
NITRATE BY IC	001	S	03LIC032	05/06/03	05/21/03	05/21/03
TOTAL CYANIDE	001	S	03LCA45	05/06/03	05/19/03	05/19/03
TOTAL CYANIDE	001 REP	S	03LCA45	05/06/03	05/19/03	05/19/03
TOTAL CYANIDE	001 MS	S	03LCA45	05/06/03	05/19/03	05/19/03
PHOSPHATE BY IC	001	S	03LIC032	05/06/03	05/21/03	05/21/03
CHROMIUM VI	001	S	03LVI043	05/06/03	05/14/03	05/14/03
SULFATE BY IC	001	S	03LIC032	05/06/03	05/21/03	05/21/03
NITRATE NITRITE	001	S	03LN3A27	05/06/03	05/22/03	05/22/03
AMMONIA	001	S	03LAMA14	05/06/03	05/24/03	05/26/03
OIL & GREASE BY GRAV	001	S	03LOG020	05/06/03	05/21/03	05/22/03
PH	001	S	03LPH035	05/06/03	05/20/03	05/20/03

LAB QC:

CHLORIDE BY IC	MB1	S	03LIC032	N/A	05/21/03	05/21/03
CHLORIDE BY IC	MB1 BS	S	03LIC032	N/A	05/21/03	05/21/03
FLUORIDE BY IC	MB1	S	03LIC032	N/A	05/21/03	05/21/03
FLUORIDE BY IC	MB1 BS	S	03LIC032	N/A	05/21/03	05/21/03
NITRITE BY IC	MB1	S	03LIC032	N/A	05/21/03	05/21/03
NITRITE BY IC	MB1 BS	S	03LIC032	N/A	05/21/03	05/21/03
NITRATE BY IC	MB1	S	03LIC032	N/A	05/21/03	05/21/03
NITRATE BY IC	MB1 BS	S	03LIC032	N/A	05/21/03	05/21/03
TOTAL CYANIDE	LCS L	S	03LCA45	N/A	05/19/03	05/19/03
TOTAL CYANIDE	LCS L	S	03LCA45	N/A	05/19/03	05/19/03
TOTAL CYANIDE	MB1	S	03LCA45	N/A	05/19/03	05/19/03
PHOSPHATE BY IC	MB1	S	03LIC032	N/A	05/21/03	05/21/03
PHOSPHATE BY IC	MB1 BS	S	03LIC032	N/A	05/21/03	05/21/03
CHROMIUM VI	MB1	S	03LVI043	N/A	05/14/03	05/14/03
CHROMIUM VI	MB1 BS	S	03LVI043	N/A	05/14/03	05/14/03
CHROMIUM VI	MB1 BSD	S	03LVI043	N/A	05/14/03	05/14/03

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2195

DATE RECEIVED: 05/08/03

LVL LOT # :0305L366

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SULFATE BY IC	MB1	S	03LIC032	N/A	05/21/03	05/21/03
SULFATE BY IC	MB1 BS	S	03LIC032	N/A	05/21/03	05/21/03
NITRATE NITRITE	MB1	S	03LN3A27	N/A	05/22/03	05/22/03
NITRATE NITRITE	MB1 BS	S	03LN3A27	N/A	05/22/03	05/22/03
AMMONIA	MB1	S	03LAMA14	N/A	05/24/03	05/26/03
AMMONIA	MB1 BS	S	03LAMA14	N/A	05/24/03	05/26/03
AMMONIA	MB1 BSD	S	03LAMA14	N/A	05/24/03	05/26/03
OIL & GREASE BY GRAV	MB1	S	03LOG020	N/A	05/21/03	05/22/03
OIL AND GREASE BY GR	MB1 BS	S	03LOG020	N/A	05/21/03	05/22/03
OIL AND GREASE BY GR	MB1 BSD	S	03LOG020	N/A	05/21/03	05/22/03

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2195

DATE RECEIVED: 05/09/03

LVL LOT # :0305L372

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W88						
% SOLIDS	001	SO	03L%S065	05/07/03	05/13/03	05/14/03
% SOLIDS	001 REP	SO	03L%S065	05/07/03	05/13/03	05/14/03
CHLORIDE BY IC	001	SO	03LIC032	05/07/03	05/21/03	05/21/03
FLUORIDE BY IC	001	SO	03LIC032	05/07/03	05/21/03	05/21/03
NITRITE BY IC	001	SO	03LIC032	05/07/03	05/21/03	05/21/03
NITRATE BY IC	001	SO	03LIC032	05/07/03	05/21/03	05/21/03
TOTAL CYANIDE	001	SO	03LCA45	05/07/03	05/19/03	05/19/03
PHOSPHATE BY IC	001	SO	03LIC032	05/07/03	05/21/03	05/21/03
CHROMIUM VI	001	SO	03LVI043	05/07/03	05/14/03	05/14/03
SULFATE BY IC	001	SO	03LIC032	05/07/03	05/21/03	05/21/03
NITRATE NITRITE	001	SO	03LN3A27	05/07/03	05/22/03	05/22/03
AMMONIA	001	SO	03LAMA14	05/07/03	05/24/03	05/26/03
OIL & GREASE BY GRAV	001	SO	03LOG020	05/07/03	05/21/03	05/22/03
PH	001	SO	03LPH035	05/07/03	05/20/03	05/20/03

LAB QC:

CHLORIDE BY IC	MB1	S	03LIC032	N/A	05/21/03	05/21/03
CHLORIDE BY IC	MB1 BS	S	03LIC032	N/A	05/21/03	05/21/03
FLUORIDE BY IC	MB1	S	03LIC032	N/A	05/21/03	05/21/03
FLUORIDE BY IC	MB1 BS	S	03LIC032	N/A	05/21/03	05/21/03
NITRITE BY IC	MB1	S	03LIC032	N/A	05/21/03	05/21/03
NITRITE BY IC	MB1 BS	S	03LIC032	N/A	05/21/03	05/21/03
NITRATE BY IC	MB1	S	03LIC032	N/A	05/21/03	05/21/03
NITRATE BY IC	MB1 BS	S	03LIC032	N/A	05/21/03	05/21/03
TOTAL CYANIDE	LCS L	S	03LCA45	N/A	05/19/03	05/19/03
TOTAL CYANIDE	LCS L	S	03LCA45	N/A	05/19/03	05/19/03
TOTAL CYANIDE	MB1	S	03LCA45	N/A	05/19/03	05/19/03
PHOSPHATE BY IC	MB1	S	03LIC032	N/A	05/21/03	05/21/03
PHOSPHATE BY IC	MB1 BS	S	03LIC032	N/A	05/21/03	05/21/03
CHROMIUM VI	MB1	S	03LVI043	N/A	05/14/03	05/14/03
CHROMIUM VI	MB1 BS	S	03LVI043	N/A	05/14/03	05/14/03
CHROMIUM VI	MB1 BSD	S	03LVI043	N/A	05/14/03	05/14/03
SULFATE BY IC	MB1	S	03LIC032	N/A	05/21/03	05/21/03
SULFATE BY IC	MB1 BS	S	03LIC032	N/A	05/21/03	05/21/03

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD F03-006 H2195

DATE RECEIVED: 05/09/03

LVL LOT # :0305L372

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
NITRATE NITRITE	MB1	S	03LN3A27	N/A	05/22/03	05/22/03
NITRATE NITRITE	MB1 BS	S	03LN3A27	N/A	05/22/03	05/22/03
AMMONIA	MB1	S	03LAMA14	N/A	05/24/03	05/26/03
AMMONIA	MB1 BS	S	03LAMA14	N/A	05/24/03	05/26/03
AMMONIA	MB1 BSD	S	03LAMA14	N/A	05/24/03	05/26/03
OIL & GREASE BY GRAV	MB1	S	03LOG020	N/A	05/21/03	05/22/03
OIL AND GREASE BY GR	MB1 BS	S	03LOG020	N/A	05/21/03	05/22/03
OIL AND GREASE BY GR	MB1 BSD	S	03LOG020	N/A	05/21/03	05/22/03



Analytical Report

Client: TNU-HANFORD F03-006 H2195

W.O.#: 11343-606-001-9999-00

LVL#: 0305L339, 0305L357, 0305L366 and 0305L372

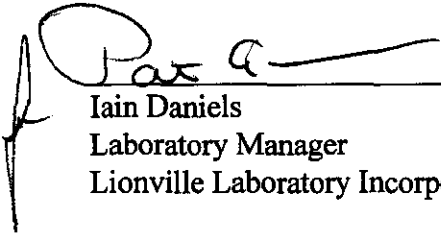
Date Received: 05-03,07,08,09-03

INORGANIC NARRATIVE

1. This narrative covers the analyses of 1 solid sample and 4 soil samples.
2. The samples were prepared and analyzed in accordance with the methods indicated on the attached glossary.
3. The sample holding times as required by the method and/or contract were met with the exception of Total Cyanide samples B16W84 and B16W85.
4. The results presented in this report are derived from samples that met LvLI's sample acceptance policy.
5. The method blanks were within the method criteria.
6. The Laboratory Control Samples (LCS) were within the laboratory control limits. The duplicate LCS for Ammonia and Oil and Grease were within the 20% Relative Percent Difference (RPD) control limit.
7. The matrix spike recoveries for Chloride, Fluoride, Nitrite, Nitrate, Phosphate, Sulfate, Nitrate Nitrite and Oil and Grease sample B16W84, Chromium VI and Ammonia sample B16W85 and Total Cyanide sample B16W87 were within the 75-125% control limits.
8. The replicate analyses for Percent Solids, Chloride, Fluoride, Nitrite, Nitrate, Phosphate, Sulfate, Nitrate Nitrite, Oil and Grease, pH, Chromium VI, Ammonia and Total Cyanide were within the 20% Relative Percent Difference (RPD) control limit.

The results presented in this report relate to the analytical testing and conditions of the samples upon receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 50 pages.

9. Results for solid samples are reported on a dry weight basis.
10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard copy package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.


Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

06-06-03
Date

njp/vi05-339,357,366,372

Lionville Laboratory Incorporated

WET CHEMISTRY

METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

	<u>ASTM</u>	<u>SW846</u>	<u>OTHER</u>
% Ash	— D2216-80		
% Moisture	— D2216-80		— ILMO4.0 (e)
% Solids	— <input checked="" type="checkbox"/> D2216-80		— ILMO4.0 (e)
% Volatile Solids	— D2216-80		
ASTM Extraction in Water	— D3987-81/85		
BTU	— D240-87		
CEC		— <input checked="" type="checkbox"/> 9081	— c
Chromium VI		— <input checked="" type="checkbox"/> 3060A/7196A	
Corrosivity ___ by coupon ___ by pH		— 1110(mod) — 9045C	
Cyanide, Total		— <input checked="" type="checkbox"/> 9010B / 9014	— ILMO4.0 (e)
Cyanide, Reactive		— Section 7.3/9014	
Halides, Extractable Organic		— 9020B	— EPA 600/4/84-008
Halides, Total		— 9020B	— EPA 600/4/84-008
EP Toxicity		— 1310A	
Flash Point		— 1010	
Ignitability		— 1010	
Oil & Grease		— <input checked="" type="checkbox"/> 9071A	— <input checked="" type="checkbox"/> 413.1(mod.)
Carbon, Total Organic		— 9060	— Lloyd Kahn (mod)
Oxygen Bomb Prep for Anions	— D240-87(mod)	— 5050	
Petroleum Hydrocarbons, Total Recoverable		— 9071	— EPA 418.1
pH, Soil		— <input checked="" type="checkbox"/> 9045C	
Sulfide, Reactive		— Section 7.3/9030B	
Sulfide		— 9030B(mod)	
Specific Gravity	— D1429-76C/	— D5057-90	
Sulfur, Total		— 9056	
Synthetic Preparation Leach		— 1312	
Paint Filter		— 9095A	
Other: Chloride, Fluoride, Nitrite, Nitrate	Method:	EPA 300.0(mod.)	
Other: Nitrate, Phosphate, Sulfate	Method:		
Nitrate Nitrite		EPA 353.2(mod.)	
Ammonia		EPA 350.3	

Lionville Laboratory Incorporated

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

* = Indicates that the original sample result is greater than 4x the spike amount added.

ABBREVIATIONS

MB = Method or Preparation Blank.
MS = Matrix Spike.
MSD = Matrix Spike Duplicate.
REP = Sample Replicate
LC = Laboratory Control Sample.
NC = Not calculated.

A suffix of -R, -S, or -T following these codes indicate a replicate, spike or sample duplicate analysis respectively.

ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.
2. USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020).
3. Test Methods for Evaluating Solid Waste (USEPA SW-846).
 - a. Standard Methods for the Examination of Water and Waste, 16 ed, (1983).
 - b. Standard Methods for the Examination of Water and Waste, 17 ed, (1989)/18ed (1992).
 - c. Method of Soil Analysis, Part 1, Physical and Mineralogical Methods, 2nd ed, (1986).
 - d. Method of Soil Analysis, Part 2, Chemical and Microbiological Properties, Am. Soc. Agron., Madison, WI (1965).
 - e. USEPA Contract Laboratory Program, Statement of Work for Inorganic Analysis.
 - f. Code of Federal Regulations.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/27/03

CLIENT: TNUHANFORD F03-006 H2195

LVL LOT #: 0305L339

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-----	-----	-----	-----	-----	-----	-----
-001	B16W84	% Solids	91.6	%	0.01	1.0
		Chloride by IC	1.4	u MG/KG	1.4	1.0
		Fluoride by IC	1.4	u MG/KG	1.4	1.0
		Nitrite by IC	1.36	u MG/KG	1.36	1.0
		Nitrate by IC	113	MG/KG	13.6	10.0
		Cyanide, Total	0.48	u MG/KG	0.48	1.0
		Phosphate by IC	1.4	u MG/KG	1.4	1.0
		Chromium VI	0.44	u MG/KG	0.44	1.0
		Sulfate by IC	2.3	MG/KG	1.4	1.0
		Nitrate Nitrite	24.1	MG/KG	1.1	5.0
		Ammonia, as N	4.8	u MG/KG	4.8	1.0
		Oil & Grease Gravimetri	727	u MG/KG	727	1.0
		pH	8.4	SOIL PH	0.01	1.0
-002	B16W85	% Solids	93.1	%	0.01	1.0
		Chloride by IC	1.3	u MG/KG	1.3	1.0
		Fluoride by IC	1.3	u MG/KG	1.3	1.0
		Nitrite by IC	1.34	u MG/KG	1.34	1.0
		Nitrate by IC	23.3	MG/KG	1.34	1.0
		Cyanide, Total	0.40	u MG/KG	0.40	1.0
		Phosphate by IC	1.3	u MG/KG	1.3	1.0
		Chromium VI	0.43	u MG/KG	0.43	1.0
		Sulfate by IC	1.3	u MG/KG	1.3	1.0
		Nitrate Nitrite	5.6	MG/KG	0.22	1.0
		Ammonia, as N	5.3	u MG/KG	5.3	1.0
		Oil & Grease Gravimetri	716	u MG/KG	716	1.0
		pH	8.6	SOIL PH	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 05/27/03

CLIENT: TNUHANFORD P03-006 H2195
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L339

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-----	-----	-----	-----	-----	-----	-----
BLANK10	03LIC032-MB1	Chloride by IC	1.2	u MG/KG	1.2	1.0
		Fluoride by IC	1.2	u MG/KG	1.2	1.0
		Nitrite by IC	1.25	u MG/KG	1.25	1.0
		Nitrate by IC	1.25	u MG/KG	1.25	1.0
		Phosphate by IC	1.2	u MG/KG	1.2	1.0
		Sulfate by IC	1.2	u MG/KG	1.2	1.0
BLANK1	03LCA45-MB1	Cyanide, Total	0.50	u MG/KG	0.50	1.0
BLANK10	03LVI041-MB1	Chromium VI	0.40	u MG/KG	0.40	1.0
BLANK10	03LN3B26-MB1	Nitrate Nitrite	0.20	u MG/KG	0.20	1.0
BLANK10	03LAMA14-MB1	Ammonia, as N	5.0	u MG/KG	5.0	1.0
BLANK10	03LOG020-MB1	Oil & Grease Gravimetri	667	u MG/KG	667	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 05/27/03

CLIENT: TNUHANFORD F03-006 H2195

LVL LOT #: 0305L339

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
-----	-----	-----	-----	-----	-----	-----	-----
-001	B16W84	Chloride by IC	26.9	0.40	27.3	97.0	1.0
		Fluoride by IC	27.5	0.66	27.3	98.3	1.0
		Nitrite by IC	26.6	1.36u	27.3	97.7	1.0
		Nitrate by IC	399	113	273	105.0	10.0
		Phosphate by IC	25.1	1.4 u	27.3	91.9	1.0
		Sulfate by IC	30.8	2.3	27.3	104.4	1.0
		Nitrate Nitrite	30.3	24.1	5.5	112.6*	5.0
		Oil & Grease Gravimetr	6820	727 u	7900	86.3	1.0
-002	B16W85	Soluble Chromium VI	3.7	0.43u	4.3	80.1	1.0
		Insoluble Chromium VI	1190	0.43u	1200	99.0	100
		Ammonia, as N	192	5.3 u	199	96.5	1.0
BLANK10	03LIC032-MB1	Chloride by IC	24.2	1.2 u	25.0	96.7	1.0
		Fluoride by IC	24.7	1.2 u	25.0	98.9	1.0
		Nitrite by IC	24.5	1.25u	25.0	98.1	1.0
		Nitrate by IC	24.3	1.25u	25.0	97.2	1.0
		Phosphate by IC	23.4	1.2 u	25.0	93.7	1.0
		Sulfate by IC	24.5	1.2 u	25.0	97.8	1.0
BLANK10	03LV1041-MB1	Soluble Chromium VI	3.9	0.40u	4.0	96.6	1.0
		Insoluble Chromium VI	1220	0.40u	1250	97.8	100
BLANK10	03LN3B26-MB1	Nitrate Nitrite	5.1	0.20u	5.0	102.4	1.0
BLANK10	03LAMA14-MB1	Ammonia, as N	196	5.0 u	200	98.0	1.0
		Ammonia, as N MSD	192	5.0 u	200	96.0	1.0
BLANK10	03LOG020-MB1	Oil & Grease Gravimetr	6470	667 u	7240	89.3	1.0
		Oil & Grease - Grav M	7120	667 u	7240	98.3	1.0

Lionville Laboratory, Inc.

INORGANICS DUPLICATE SPIKE REPORT 05/27/03

CLIENT: TNUHANFORD F03-006 H2195
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L339

SAMPLE	SITE ID	ANALYTE	SPIKE#1	SPIKE#2	%DIFF
			%RECOV	%RECOV	
BLANK10	03LAMA14-MB1	Ammonia, as N	98.0	96.0	2.1
BLANK10	03LOG020-MB1	Oil & Grease - Grav	89.3	98.3	9.6

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 05/27/03

CLIENT: TNUHANFORD F03-006 H2195
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L339

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR (REP)
*****	*****	*****	*****	*****	*****	*****
-001REP	B16W84	Chloride by IC	1.4 u	1.4 u	NC	1.0
		Fluoride by IC	1.4 u	1.4 u	NC	1.0
		Nitrite by IC	1.36u	1.36u	NC	1.0
		Nitrate by IC	113	104	7.9	10.0
		Phosphate by IC	1.4 u	1.4 u	NC	1.0
		Sulfate by IC	2.3	2.1	11.1	1.0
		Nitrate Nitrite	24.1	24.0	0.44	5.0
		Oil & Grease Gravimetri	727 u	727 u	NC	1.0
		pH	8.4	8.4	0.5	1.0
-002REP	B16W85	% Solids	93.1	92.6	0.51	1.0
		Chromium VI	0.43u	0.43u	NC	1.0
		Ammonia, as N	5.3 u	5.1 u	NC	1.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 05/27/03

CLIENT: TNUHANFORD F03-006 H2195
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L339

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
-----	-----	-----	-----	-----	-----	-----
LCSS1	03LCA45-LCS1	Cyanide, Total LCS	1.87	2.0	MG/KG	93.6
LCSS2	03LCA45-LCS2	Cyanide, Total LCS	9.66	10.0	MG/KG	96.6

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/27/03

CLIENT: TNUHANFORD F03-006 H2195
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L357

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-----	-----	-----	-----	-----	-----	-----
-001	B16W86	% Solids	96.8	%	0.01	1.0
		Chloride by IC	1.3	u MG/KG	1.3	1.0
		Fluoride by IC	1.3	u MG/KG	1.3	1.0
		Nitrite by IC	1.29	u MG/KG	1.29	1.0
		Nitrate by IC	6.96	u MG/KG	1.29	1.0
		Cyanide, Total	0.33	u MG/KG	0.33	1.0
		Phosphate by IC	1.3	u MG/KG	1.3	1.0
		Chromium VI	0.41	u MG/KG	0.41	1.0
		Sulfate by IC	3.4	u MG/KG	1.3	1.0
		Nitrate Nitrite	1.9	u MG/KG	0.19	1.0
		Ammonia, as N	4.8	u MG/KG	4.8	1.0
		Oil & Grease Gravimetri	689	u MG/KG	689	1.0
		pH	8.9	SOIL PH	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 05/27/03

CLIENT: TNUHANFORD F03-006 H2195
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L357

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-----	-----	-----	-----	-----	-----	-----
BLANK10	03LIC032-MB1	Chloride by IC	1.2	u MG/KG	1.2	1.0
		Fluoride by IC	1.2	u MG/KG	1.2	1.0
		Nitrite by IC	1.25	u MG/KG	1.25	1.0
		Nitrate by IC	1.25	u MG/KG	1.25	1.0
		Phosphate by IC	1.2	u MG/KG	1.2	1.0
		Sulfate by IC	1.2	u MG/KG	1.2	1.0
BLANK1	03LC045-MB1	Cyanide, Total	0.50	u MG/KG	0.50	1.0
BLANK10	03LVI043-MB1	Chromium VI	0.40	u MG/KG	0.40	1.0
BLANK10	03LN3A27-MB1	Nitrate Nitrite	0.20	u MG/KG	0.20	1.0
BLANK10	03LAMA14-MB1	Ammonia, as N	5.0	u MG/KG	5.0	1.0
BLANK10	03LOG020-MB1	Oil & Grease Gravimetri	667	u MG/KG	667	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 05/27/03

CLIENT: TNUHANFORD F03-006 H2195
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L357

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
-----	-----	-----	-----	-----	-----	-----	-----
BLANK10	03LIC032-MB1	Chloride by IC	24.2	1.2 u	25.0	96.7	1.0
		Fluoride by IC	24.7	1.2 u	25.0	98.9	1.0
		Nitrite by IC	24.5	1.25u	25.0	98.1	1.0
		Nitrate by IC	24.3	1.25u	25.0	97.2	1.0
		Phosphate by IC	23.4	1.2 u	25.0	93.7	1.0
		Sulfate by IC	24.5	1.2 u	25.0	97.8	1.0
BLANK10	03LVIO43-MB1	Soluble Chromium VI	4.0	0.40u	4.0	98.9	1.0
		Insoluble Chromium VI	970	0.40u	1050	92.3	100
BLANK10	03LN3A27-MB1	Nitrate Nitrite	5.2	0.20u	5.0	104.0	1.0
BLANK10	03LAMA14-MB1	Ammonia, as N	196	5.0 u	200	98.0	1.0
		Ammonia, as N MSD	192	5.0 u	200	96.0	1.0
BLANK10	03LOG020-MB1	Oil & Grease Gravimetr	6470	667 u	7240	89.3	1.0
		Oil & Grease - Grav M	7120	667 u	7240	98.3	1.0

Lionville Laboratory, Inc.

INORGANICS DUPLICATE SPIKE REPORT 05/27/03

CLIENT: TNUHANFORD F03-006 H2195
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L357

SAMPLE	SITE ID	ANALYTE	SPIKE#1	SPIKE#2	%DIFF
			%RECOV	%RECOV	
BLANK10	03LAMA14-MB1	Ammonia, as N	98.0	96.0	2.1
BLANK10	03LOG020-MB1	Oil & Grease - Grav	89.3	98.3	9.6

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 05/27/03

CLIENT: TNUHANFORD F03-006 H2195
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L357

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR (REP)
-----	-----	-----	-----	-----	-----	-----
-001REP	B16W86	% Solids	96.8	97.0	0.25	1.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 05/27/03

CLIENT: TNUHANFORD F03-006 H2195
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L357

SAMPLE	SITE ID	ANALYTE	SAMPLE	SPIKED AMOUNT	SPIKED UNITS	%RECOV
-----	-----	-----	-----	-----	-----	-----
LCSS1	03LC045-LCS1	Cyanide, Total LCS	1.84	2.0	MG/KG	92.0
LCSS2	03LC045-LCS2	Cyanide, Total LCS	10.0	10.0	MG/KG	100.1

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/27/03

CLIENT: TNUHANFORD F03-006 H2195
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L366

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-----	-----	-----	-----	-----	-----	-----
-001	B16W87	% Solids	97.4	%	0.01	1.0
		Chloride by IC	1.3	u MG/KG	1.3	1.0
		Fluoride by IC	1.3	u MG/KG	1.3	1.0
		Nitrite by IC	1.28	u MG/KG	1.28	1.0
		Nitrate by IC	5.50	MG/KG	1.28	1.0
		Cyanide, Total	0.28	u MG/KG	0.28	1.0
		Phosphate by IC	1.3	u MG/KG	1.3	1.0
		Chromium VI	0.41	u MG/KG	0.41	1.0
		Sulfate by IC	4.5	MG/KG	1.3	1.0
		Nitrate Nitrite	1.4	MG/KG	0.20	1.0
		Ammonia, as N	4.5	u MG/KG	4.5	1.0
		Oil & Grease Gravimetri	684	u MG/KG	684	1.0
		pH	8.9	SOIL PH	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 05/27/03

CLIENT: TNUHANFORD F03-006 H2195
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L366

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-----	-----	-----	-----	-----	-----	-----
BLANK10	03LIC032-MB1	Chloride by IC	1.2 u	MG/KG	1.2	1.0
		Fluoride by IC	1.2 u	MG/KG	1.2	1.0
		Nitrite by IC	1.25 u	MG/KG	1.25	1.0
		Nitrate by IC	1.25 u	MG/KG	1.25	1.0
		Phosphate by IC	1.2 u	MG/KG	1.2	1.0
		Sulfate by IC	1.2 u	MG/KG	1.2	1.0
BLANK1	03LCA45-MB1	Cyanide, Total	0.50 u	MG/KG	0.50	1.0
BLANK10	03LVI043-MB1	Chromium VI	0.40 u	MG/KG	0.40	1.0
BLANK10	03LN3A27-MB1	Nitrate Nitrite	0.20 u	MG/KG	0.20	1.0
BLANK10	03LAMA14-MB1	Ammonia, as N	5.0 u	MG/KG	5.0	1.0
BLANK10	03LOG020-MB1	Oil & Grease Gravimetri	667 u	MG/KG	667	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 05/27/03

CLIENT: TNUHANFORD F03-006 H2195
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L366

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
-001	B16W87	Cyanide, Total	4.46	0.28u	4.45	100.1	1.0
BLANK10	03LIC032-MB1	Chloride by IC	24.2	1.2 u	25.0	96.7	1.0
		Fluoride by IC	24.7	1.2 u	25.0	98.9	1.0
		Nitrite by IC	24.5	1.25u	25.0	98.1	1.0
		Nitrate by IC	24.3	1.25u	25.0	97.2	1.0
		Phosphate by IC	23.4	1.2 u	25.0	93.7	1.0
		Sulfate by IC	24.5	1.2 u	25.0	97.8	1.0
BLANK10	03LVI043-MB1	Soluble Chromium VI	4.0	0.40u	4.0	98.9	1.0
		Insoluble Chromium VI	970	0.40u	1050	92.3	100
BLANK10	03LN3A27-MB1	Nitrate Nitrite	5.2	0.20u	5.0	104.0	1.0
BLANK10	03LAMA14-MB1	Ammonia, as N	196	5.0 u	200	98.0	1.0
		Ammonia, as N MSD	192	5.0 u	200	96.0	1.0
BLANK10	03LOG020-MB1	Oil & Grease Gravimetr	6470	667 u	7240	89.3	1.0
		Oil & Grease - Grav M	7120	667 u	7240	98.3	1.0

Lionville Laboratory, Inc.

INORGANICS DUPLICATE SPIKE REPORT 05/27/03

CLIENT: TNUHANFORD F03-006 H2195
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L366

SAMPLE	SITE ID	ANALYTE	SPIKE#1	SPIKE#2	%DIFF
			%RECOV	%RECOV	
BLANK10	03LAMA14-MB1	Ammonia, as N	98.0	96.0	2.1
BLANK10	03LOG020-MB1	Oil & Grease - Grav	89.3	98.3	9.6

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 05/27/03

CLIENT: TNUHANFORD P03-006 H2195

LVL LOT #: 0305L366

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR (REF)
-----	-----	-----	-----	-----	-----	-----
-001REP	B16W87	% Solids	97.4	97.4	0.092	1.0
		Cyanide, Total	0.28u	0.38u	NC	1.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 05/27/03

CLIENT: TNUHANFORD F03-006 H2195
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L366

SAMPLE	SITE ID	ANALYTE	SAMPLE	SPIKED AMOUNT	SPIKED UNITS	%RECOV
-----	-----	-----	-----	-----	-----	-----
LCSS1	03LCA45-LCS1	Cyanide, Total LCS	1.87	2.0	MG/KG	93.6
LCSS2	03LCA45-LCS2	Cyanide, Total LCS	9.66	10.0	MG/KG	96.6

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/27/03

CLIENT: TNUHANFORD F03-006 H2195
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L372

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-----	-----	-----	-----	-----	-----	-----
-001	B16W88	% Solids	98.7	%	0.01	1.0
		Chloride by IC	1.3	u MG/KG	1.3	1.0
		Fluoride by IC	1.3	u MG/KG	1.3	1.0
		Nitrite by IC	1.27	u MG/KG	1.27	1.0
		Nitrate by IC	4.52	u MG/KG	1.27	1.0
		Cyanide, Total	0.42	u MG/KG	0.42	1.0
		Phosphate by IC	1.3	u MG/KG	1.3	1.0
		Chromium VI	0.40	u MG/KG	0.40	1.0
		Sulfate by IC	9.3	u MG/KG	1.3	1.0
		Nitrate Nitrite	1.2	u MG/KG	0.20	1.0
		Ammonia, as N	4.7	u MG/KG	4.7	1.0
		Oil & Grease Gravimetri	675	u MG/KG	675	1.0
		pH	8.9	SOIL PH	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 05/27/03

CLIENT: TNUHANFORD F03-006 H2195
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L372

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-----	-----	-----	-----	-----	-----	-----
BLANK10	03LIC032-MB1	Chloride by IC	1.2	u MG/KG	1.2	1.0
		Fluoride by IC	1.2	u MG/KG	1.2	1.0
		Nitrite by IC	1.25	u MG/KG	1.25	1.0
		Nitrate by IC	1.25	u MG/KG	1.25	1.0
		Phosphate by IC	1.2	u MG/KG	1.2	1.0
		Sulfate by IC	1.2	u MG/KG	1.2	1.0
BLANK1	03LCA45-MB1	Cyanide, Total	0.50	u MG/KG	0.50	1.0
BLANK10	03LVI043-MB1	Chromium VI	0.40	u MG/KG	0.40	1.0
BLANK10	03LN3A27-MB1	Nitrate Nitrite	0.20	u MG/KG	0.20	1.0
BLANK10	03LAMA14-MB1	Ammonia, as N	5.0	u MG/KG	5.0	1.0
BLANK10	03LOG020-MB1	Oil & Grease Gravimetri	667	u MG/KG	667	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 05/27/03

CLIENT: TNUHANFORD F03-006 H2195
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L372

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
BLANK10	03LIC032-MB1	Chloride by IC	24.2	1.2 u	25.0	96.7	1.0
		Fluoride by IC	24.7	1.2 u	25.0	98.9	1.0
		Nitrite by IC	24.5	1.25u	25.0	98.1	1.0
		Nitrate by IC	24.3	1.25u	25.0	97.2	1.0
		Phosphate by IC	23.4	1.2 u	25.0	93.7	1.0
		Sulfate by IC	24.5	1.2 u	25.0	97.8	1.0
BLANK10	03LVI043-MB1	Soluble Chromium VI	4.0	0.40u	4.0	98.9	1.0
		Insoluble Chromium VI	970	0.40u	1050	92.3	100
BLANK10	03LN3A27-MB1	Nitrate Nitrite	5.2	0.20u	5.0	104.0	1.0
BLANK10	03LAMA14-MB1	Ammonia, as N	196	5.0 u	200	98.0	1.0
		Ammonia, as N MSD	192	5.0 u	200	96.0	1.0
BLANK10	03LOG020-MB1	Oil & Grease Gravimetr	6470	667 u	7240	89.3	1.0
		Oil & Grease - Grav M	7120	667 u	7240	98.3	1.0

Lionville Laboratory, Inc.

INORGANICS DUPLICATE SPIKE REPORT 05/27/03

CLIENT: TNUHANFORD F03-006 H2195
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L372

SAMPLE	SITE ID	ANALYTE	SPIKE#1	SPIKE#2	%DIFF
			%RECOV	%RECOV	
BLANK10	03LAMA14-MB1	Ammonia, as N	98.0	96.0	2.1
BLANK10	03LOG020-MB1	Oil & Grease - Grav	89.3	98.3	9.6

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 05/27/03

CLIENT: TNUHANFORD F03-006 H2195
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L372

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE RPD	DILUTION FACTOR (REP)
-001REP	B16W88	% Solids	98.7	98.4 0.39	1.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 05/27/03

CLIENT: TNUHANFORD F03-006 H2195
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L372

SAMPLE	SITE ID	ANALYTE	SAMPLE	SPIKED AMOUNT	SPIKED UNITS	%RECOV
-----	-----	-----	-----	-----	-----	-----
LCSS1	03LCA45-LCS1	Cyanide, Total LCS	1.87	2.0	MG/KG	93.6
LCSS2	03LCA45-LCS2	Cyanide, Total LCS	9.66	10.0	MG/KG	96.6

FH-Central Plateau Project			CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-67		Page 1 of 1		
Collector Johansen/Pope/Pfister			Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling			Sampling Location 216-A-37 (C4106); (72.5'-75')			SAF No. F03-006		Air Quality <input type="checkbox"/>				
Ice Chest No. ERC-01-038			Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To REXIA EBERLINE SERVICES (Formerly TMA) 1/24 4/14/03			Offsite Property No. A030221			Bill of Lading/Air Bill No. SEE OSA						
POSSIBLE SAMPLE HAZARDS/REMARKS Radioactive Tie To B16WDO Special Handling and/or Storage COB 140L				Preservation		Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container		aG	aG	aG	aG	aG		
				No. of Container(s)		1	1	1	1	1		
				Volume		120mL	60mL	120mL	60mL	60mL		
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions 280 4/24/03	Tritium - H3				
							Tie To!					
Sample No.		Matrix *		Sample Date		Sample Time						
B16W84		SOIL		4-30-03		1900		B16WDO				
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS 1/24 4/24/03 ** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (1) Technetium-99; Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 1/24 4/24/03				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
MUNNENHANN 4-30-03 1430		1430		R. G. 4-30-03 1430		1430						
R. G. 4-30-03 1430		1430		R. G. 4-30-03 1430		1430						
R. G. 4-30-03 1430		1430		R. G. 4-30-03 1430		1430						
R. G. 4-30-03 1430		1430		R. G. 4-30-03 1430		1430						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Matrix * S=Soil SE=Soil/Element SO=Solid SI=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other				
R. G. 4-30-03 1430		1430		R. G. 4-30-03 1430		1430						
R. G. 4-30-03 1430		1430		R. G. 4-30-03 1430		1430						
R. G. 4-30-03 1430		1430		R. G. 4-30-03 1430		1430						
R. G. 4-30-03 1430		1430		R. G. 4-30-03 1430		1430						
R. G. 4-30-03 1430		1430		R. G. 4-30-03 1430		1430						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		LABORATORY SECTION Received By _____ Title _____ Date/Time _____ FINAL SAMPLE DISPOSITION Disposal Method _____ Disposed By _____ Date/Time _____				
R. G. 4-30-03 1430		1430		R. G. 4-30-03 1430		1430						
R. G. 4-30-03 1430		1430		R. G. 4-30-03 1430		1430						
R. G. 4-30-03 1430		1430		R. G. 4-30-03 1430		1430						
R. G. 4-30-03 1430		1430		R. G. 4-30-03 1430		1430						
R. G. 4-30-03 1430		1430		R. G. 4-30-03 1430		1430						

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-68		Page 1 of 1		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (97.5°-100°)				SAF No. F03-006		Air Quality <input type="checkbox"/>			
Ice Chest No. ERC 01-038		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To RECEIVED EBERLINE SERVICES (Formerly TMA) 4/22/03		Offsite Property No. A030 224				Bill of Lading/Air Bill No. SEF 05PC					
POSSIBLE SAMPLE HAZARDS/REMARKS Radioactive Tc-99 B16WD1 Special Handling and/or Storage cool 40C				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container	aG	aG	aG	aG	aG		
				No. of Container(s)	1	1	1	1	1		
				Volume	120mL	60mL	120mL	60mL	60mL		
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions	Tritium - H3			
								T10 TO:			
Sample No.	Matrix *	Sample Date	Sample Time								
B16W85	SOIL	4-30-03	1238	X	X	X				B16WD1	
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		** The laboratory is to achieve a detection limit of 30.0 PC/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. (1) Technetium-99; Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 4/22/03 982			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
LABORATORY SECTION				Received By				Title			
FINAL SAMPLE DISPOSITION				Disposal Method				Disposed By			
								Date/Time			

LIONVILLE LABORATORY INCORPORATED

SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hartford

Purchase Order/Project:

DATE: 5-3-03

SAF# / SOW# / Release #: F03-006

Laboratory SDG #:

0305L339

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | | | | |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets LVLJ Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

ERC 01-038 / 0.6°C

Laboratory Sample Custodian:

Laboratory Project Manager:

[Signature]

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-69		Page 1 of 1		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (147.5'-150')		SAF No. F03-006		Air Quality <input type="checkbox"/>					
Ice Chest No. ERC 01-063		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To ECRA 1st BERLINE SERVICES (Formerly TMA) 4/22/03		Offsite Property No. A030 222		Bill of Lading/Air Bill No. SEE OSL							
POSSIBLE SAMPLE HAZARDS/REMARKS Radioactive Tie to B16 WDO Special Handling and/or Storage cool 4°C				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container	aG	aG	aG	aG	aG		
				No. of Container(s)	1	1	1	1	1		
				Volume	120mL	60mL	120mL	60mL	60mL		
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions 4/22/03	Tritium - H3			
											Tie to:
Sample No.	Matrix *	Sample Date	Sample Time								
B16W86	SOIL	5/5/3	0900	X	X	X					B16W86
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *			
Relinquished By/Removed From Johansen/Pope/Pfister 5/5/03 1315		Received By/Stored In REF 1A 5-5-03 1315		<p>Age 4/22/03</p> <p>** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.</p> <p>(+) Technetium-99; Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237</p> <p>982 4/22/03</p> <p>Personnel not available to relinquish samples from the 3728 Ref # 1A on 5/16/03</p>				<p>S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other</p>			
Relinquished By/Removed From 1A 3728 5-6-03 1000		Received By/Stored In Ref 1A 5-6-03 1000									
Relinquished By/Removed From Johansen/Pope/Pfister 5-6-03 1000		Received By/Stored In Ref 1A 5-6-03 1000									
Relinquished By/Removed From Johansen/Pope/Pfister 5-7-03 10:10		Received By/Stored In Ref 1A 5-7-03 10:10									
Relinquished By/Removed From Johansen/Pope/Pfister 5-7-03 10:10		Received By/Stored In Ref 1A 5-7-03 10:10									
Relinquished By/Removed From Johansen/Pope/Pfister 5-7-03 10:10		Received By/Stored In Ref 1A 5-7-03 10:10									
LABORATORY SECTION		Received By		Title				Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time			

LIONVILLE LABORATORY INCORPORATED

SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hanford

Purchase Order/Project:

DATE: 5.7.03

AF# / SOW# / Release #: F03-006

Laboratory SDG #:

0305L357

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | | | | |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets LVL Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

EEC-01-063 / 2.3~

Laboratory Sample Custodian:

Laboratory Project Manager:

[Signature]

Lionville Laboratory Use Only

0305L366

(6) VOA, UNH, PFCs, From: Initials, DIG, Niche Custody Transfer Record/Lab Work Request Page 1 of 1



FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client <u>TNU-Hamford</u> <u>F03-006</u>				Refrigerator #																			
Est. Final Proj. Sampling Date				#/Type Container		Liquid																	
Project # <u>11343-606-001-9999-00</u>						Solid																	
Project Contact/Phone #				Volume		Liquid																	
Lionville Laboratory Project Manager <u>Orlette Johnson</u>						Solid																	
QC <u>SPEC</u> Del <u>512</u> TAT <u>30 days</u>				Preservatives																			
Date Rec'd <u>5-8-03</u> Date Due <u>6-16-03</u>				ANALYSES REQUESTED		<div style="display: flex; justify-content: space-between;"> <div> <p>ORGANIC</p> <p>VOA BNA Pest/PCB Herb</p> </div> <div> <p>INORG</p> <p>Metal CN</p> </div> </div>																	
<p>MATRIX CODES:</p> <p>S - Soil</p> <p>SE - Sediment</p> <p>SO - Solid</p> <p>SL - Sludge</p> <p>W - Water</p> <p>O - Oil</p> <p>A - Air</p> <p>DS - Drum Solids</p> <p>DL - Drum Liquids</p> <p>L - EP/TCLP Leachate</p> <p>WI - Wipe</p> <p>X - Other</p> <p>F - Fish</p>				Matrix		Date Collected		Time Collected		Lionville Laboratory Use Only													
				Matrix QC Chosen (✓)																			
				MS		MSD																	
001 B116L287				X		X		S		5-6-03		0945		<div style="display: flex; justify-content: space-around;"> <div>Ice6</div> <div>140N2</div> <div>106GA</div> </div>									

Special Instructions: SAF # F03-006

Batch QC for L339, 357, 366, 372

DATE/REVISIONS:

- 5-14-03 1. Per Client Due Date: 6-16-03
2. Add: Ag, Ar, B, Ba, Be, Bi, Cd, Cr, Cu, Hg,
3. Ni, Pb, Sb, Se, /EC: Cl, F, I, NO₃, NO₂, P, O₄, SO₄
4. INH3N, I PH, 0624H, 0625X, 06CSC, OPCB
5. ODRW, 06RO, CNTD
- 6.

Lionville Laboratory Use Only

Samples were:

1) Shipped ☒ or Hand Delivered ☐

Airbill # 7907 7425 9278

2) Ambient or ☒ Chilled

3) Received in Good Condition ☒ or N

4) Samples Properly Preserved ☒ or N

5) Received Within Holding Times ☒ or N

Tamper Resistant Seal was:

1) Present on Outer Package ☒ or N

2) Unbroken on Outer Package ☒ or N

3) Present on Sample ☒ or N

4) Unbroken on Sample ☒ or N

COC Record Present Upon Sample Rec't ☒ or N

Cooler Temp. 2.0 °C

Relinquished by	Received by	Date	Time
<u>[Signature]</u>	<u>[Signature]</u>	<u>5-8-03</u>	<u>10:00</u>

Relinquished by	Received by	Date	Time
<u>COMPOSITE WASTE</u>	<u>ORIGINAL REWRITTEN</u>		

Discrepancies Between Samples Labels and COC Record? Y or ☒ N

NOTES:

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-70		Page 1 of 1		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (197.5'-200')			SAF No. F03-006		Air Quality <input type="checkbox"/>				
Ice Chest No. ERC 99.022		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To EBERLINE SERVICES (Formerly TMA) <i>PER 4/22/03</i>		Offsite Property No. A030 222				Bill of Lading/Air Bill No. SEE 83PC					
POSSIBLE SAMPLE HAZARDS/REMARKS <i>Radioactive</i> <i>Tie To B16WDO</i> Special Handling and/or Storage <i>COOL 4°C</i>				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container	aG	aG	aG	aG	aG		
				No. of Container(s)	1	1	1	1	1		
				Volume	120mL	60mL	120mL	60mL	60mL		
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instruction.	Tritium - H3			
Sample No.	Matrix *	Sample Date	Sample Time								
B16W87	SOIL	5/6/03	0945	X	X	X	V				
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS <i>PER 4/22/03</i>				Matrix *			
Relinquished By/Removed From <i>PER 5/6/03 1000</i>		Date/Time		Received By/Stored In <i>REF 1A 3728 5/6/03 1100</i>		Date/Time		<p>** The laboratory is to achieve a detection limit of 30.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.</p> <p>(1) Technetium-99; Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14, iodine-129, Nickel-63, Neptunium-237 <i>PER 4/22/03</i></p> <p>Personnel not available to relinquish samples from the 3728 Ref #1A on 5/7/03</p>			
Relinquished By/Removed From <i>1A 3728 5-7-03 1000</i>		Date/Time		Received By/Stored In <i>REF 1A 3728 5-7-03 1000</i>		Date/Time					
Relinquished By/Removed From <i>PER 5-7-03 1000</i>		Date/Time		Received By/Stored In <i>REF 1A 3728 5-7-03 1000</i>		Date/Time					
Relinquished By/Removed From <i>PER 5-8-03 10:00</i>		Date/Time		Received By/Stored In <i>REF 1A 3728 5-8-03 10:00</i>		Date/Time					
Relinquished By/Removed From <i>PER 5-8-03 10:00</i>		Date/Time		Received By/Stored In <i>REF 1A 3728 5-8-03 10:00</i>		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
LABORATORY SECTION		Received By		Title				Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time			

LIONVILLE LABORATORY INCORPORATED

SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hamford

Purchase Order/Project:

DATE: 5.8.03

IAF# SOW# / Release #: F03-006

Laboratory SDG #:

0305L366

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
|--|---|-----------------------------|-------------------------------------|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Airbill # recorded? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. All sample label information matches coc? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. Shipment meets Lvl1 Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 12. coc signed and dated? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Cooler # / temp (°C) and Comments:

ERC 99-022 / 2.0°

Laboratory Sample Custodian:

[Signature]

Laboratory Project Manager:

Lionville Laboratory Use Only

03054372

(6) VOA, BNA, PPCIS - from. Metals, etc., Nuth

Custody Transfer Record/Lab Work Request

Page 1 of 1



48

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client <u>INU - HANFORD</u> <u>F03-006</u>				Refrigerator #		<div style="display: flex; justify-content: space-between;"> A B C </div> <div style="display: flex; justify-content: space-between;"> 2 1 </div>															
Est. Final Proj. Sampling Date				#/Type Container	Liquid																
Project # <u>11343-606.001-9999-00</u>					Solid	<div style="display: flex; justify-content: space-between;"> 1A6 1A6 1A6 </div>															
Project Contact/Phone #				Volume	Liquid																
Lionville Laboratory Project Manager <u>05</u>					Solid	<div style="display: flex; justify-content: space-between;"> 120 60 120 </div>															
QC <u>SPEC</u> Del <u>SD</u> TAT <u>30 day</u>				Preservatives																	
Date Rec'd <u>5-9-03</u> Date Due <u>6-16-03</u> <u>6-8-03</u>				ANALYSES REQUESTED →		ORGANIC					INORG										
						VOA	BNA	Pest/PCB	Herb	Metal	CN	Chem Hex	N02	N03	Oil GREASE						
				Lionville Laboratory Use Only																	
MATRIX CODES: S - Soil SE - Sediment SG - Solid SL - Sludge W - Water O - Oil A - Air DS - Drum Solids DL - Drum Liquids L - EP/TCLP Leachate WI - Wipe X - Other F - Fish	Lab ID	Client ID/Description	Matrix QC Chosen (✓)		Matrix	Date Collected	Time Collected														
			MS	MSD																	
	001	B16W88	✓	✓	So	5-203	1050	<div style="display: flex; justify-content: space-between;"> 1 1 1 </div>													

Special Instructions: SAF # F03-006

Batch QC For 1339, 357, 366, 372

DATE/REVISIONS:

5-14-03 1. Per Client Due Date: 6-16-03

2. Add Ag, As, B, Ba, Be, Bi, Cd, Cr, Cu, Hg, Ni, Pb,

3. Sb, Se / IC: Cl, F, NO₃, NO₂, PO₄, SO₄

4. IAHJN, IAH, 0624H, 0625X, 06CJC, 0ACB

5. ODR0, 06R0, CNTD

6.

Lionville Laboratory Use Only

Samples were:

1) Shipped ☒ or Hand Delivered ☐

Airbill # 5CE
6E10W

2) Ambient or Chilled

3) Received in Good Condition ☒ or N

4) Samples Properly Preserved ☒ or N

5) Received Within Holding Times ☒ or N

Tamper Resistant Seal was:

1) Present on Outer Package ☒ or N

2) Unbroken on Outer Package ☒ or N

3) Present on Sample ☒ or N

4) Unbroken on Sample ☒ or N

COC Record Present Upon Sample Rec't ☒ or N

Cooler Temp. 1.5 °C

Relinquished by	Received by	Date	Time
<u>FEDEX</u>	<u>Carle King</u>	<u>5-9-03</u>	<u>0930</u>

Relinquished by	Received by	Date	Time
<u>COMPOSITE WASTE</u>	<u>ORIGINAL REWRITTEN</u>		

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES:

791589128567

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-71		Page 1 of 1		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (237.5'-240')		SAF No. F03-006		Air Quality <input type="checkbox"/>					
Ice Chest No. ERC-01-01/0		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To RECEIVED BERLINE SERVICES (Formerly TMA) 4/24/03		Offsite Property No.		Bill of Lading/Air Bill No. see OSC							
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage		Preservation	Cool 4C	Cool 4C	Cool 4C	None	None				
		Type of Container	aG	aG	aG	aG	aG				
		No. of Container(s)	1	1	1	1	1				
		Volume	120mL	60mL	120mL	60mL	60mL				
SAMPLE ANALYSIS		Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions	Tritium - H3					
Sample No.	Matrix *	Sample Date	Sample Time								
B16W88	SOIL	5-7-03	1050	X	X	X					
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *			
Relinquished By/Removed From SJOALE 5/7/03 1440		Received By/Stored In SJOALE 5/7/03 1440		<p>Personnel not available to relinquish samples from the 3728 Ref # 16 on 5/8/03</p> <p>(1) Technetium-99, Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237</p> <p>** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.</p>				<p>S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other</p>			
Relinquished By/Removed From SJOALE 5/7/03 1440		Received By/Stored In REF 16 3728 5/7/03 1440									
Relinquished By/Removed From 3728 Ref 16 5/8/03 0830		Received By/Stored In REF 16 3728 5/8/03 0830									
Relinquished By/Removed From FEDEX 5/8/03 0830		Received By/Stored In FEDEX									
Relinquished By/Removed From FEDEX 5-9-03 0930		Received By/Stored In FEDEX 5-9-03 0930									
Relinquished By/Removed From		Received By/Stored In									
LABORATORY SECTION		Received By		Title				Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time			

LIONVILLE LABORATORY INCORPORATED

SAMPLE RECEIPT CHECKLIST

Client: TNU HANFORD
 Purchase Order/Project:

DATE: 5-9-03

Ref# / SOW# / Release #: F03-006

Laboratory SDG #: 03056372

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- | | | | | |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets LVL1 Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

1.5°
 ERC 01-040

Laboratory Sample Custodian:

Laboratory Project Manager:



EBERLINE

SERVICES

July 14, 2003

Mr. Steve Trent
Fluor Hanford Inc.
825 Jadwin Avenue
Richland, WA 99352

Reference: **P.O. #630**
Eberline Services R3-05-021-7508, SDG H2195 – Supplemental Report

Dear Mr. Trent:

Enclosed is the data report for five solid samples designated under SAF No. F03-006 received at Eberline Services on May 5, 8, and 9, 2003. The samples were analyzed according to the accompanying chain-of-custody documents. This supplemental report is being issued to report isotopic thorium data.

Please call if you have any questions concerning this report.

Sincerely,

Melissa C. Mannion
Program Manager

MCM

Enclosure: Data Package



Analytical Services
2030 Wright Avenue
P.O. Box 4040
Richmond, California 94804-0040
(510) 235-2633 Fax (510) 235-0438
Toll Free (800) 841-5487
www.eberlineservices.com

1.0 GENERAL

Fluor Hanford Inc. (FH) Sample Delivery Group H2195 was composed of five solid (soil) samples designated under SAF No. F03-006 with a Project Designations of: 200-PW-2/200-PW-4 OU – Borehole Soil Sampling.

The samples were received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist.

2.0 ANALYSIS NOTES

2.1 Tritium Analyses

No problems were encountered during the course of the analyses.

2.2 Carbon-14 Analyses

No problems were encountered during the course of the analyses.

2.3 Nickel-63 Analyses

No problems were encountered during the course of the analyses.

2.4 Total Strontium Analyses

No problems were encountered during the course of the analyses.

2.5 Technetium-99 Analyses

No problems were encountered during the course of the analyses.

2.6 Iodine-129 Analyses

No problems were encountered during the course of the analyses.

2.7 Isotopic Thorium Analyses

Due to Th-228 and Th-230 (above RDL 1.0 pCi/g) activity in the method blank the thorium samples were reanalyzed with new QC samples. No problems were encountered during the course of the reanalyses.

The isotopic thorium data reported herein supercedes and is considered of better quality than the thorium data issued in SDG H2195 dated June 25, 2003.

2.8 Neptunium-237 Analyses

No problems were encountered during the course of the analyses.

Case Narrative Certification Statement

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data obtained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

Melissa C. Mannion
Melissa C. Mannion
Program Manager

7/14/13
Date

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H2195

SDG 7508
Contact Melissa C. Mannion

Client Hanford
Contract No. 630
Case no SDG_H2195

S U M M A R Y D A T A S E C T I O N

T A B L E O F C O N T E N T S				
About this section	.	.	.	1
Sample Summaries	.	.	.	3
Prep Batch Summary	.	.	.	5
Work Summary	.	.	.	6
Method Blanks	.	.	.	9
Lab Control Samples	.	.	.	11
Duplicates	.	.	.	13
Matrix Spikes	.	.	.	15
Data Sheets	.	.	.	16
Method Summaries	.	.	.	21
Report Guides	.	.	.	35
End of Section	.	.	.	49

Melissa Mannion
Prepared by

Melissa Mannion
Reviewed by

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-TOC
Version 3.06
Report date 07/14/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2195

SDG 7508
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG H2195

ABOUT THE DATA SUMMARY SECTION

The Data Summary Section of a Data Package has all data, in several useful orders, necessary for first level, routine review of the data package for a Sample Delivery Group (SDG). This section follows the Data Package Narrative, which has an overview of the data package and a discussion of special problems. It is followed by the Raw Data Section, which has full details.

The Data Summary Section has several groups of reports:

SAMPLE SUMMARIES

The Sample and QC Summary Reports show all samples, including QC samples, reported in one SDG. These reports cross-reference client and lab sample identifiers.

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches (lab groupings reflecting how work was organized) relevant to the reported SDG with information necessary to check the completeness and consistency of the SDG.

WORK SUMMARY

The Work Summary Report shows all samples and work done on them relevant to the reported SDG.

METHOD BLANKS

The Method Blank Reports, one for each Method Blank relevant to the SDG, show all results and primary supporting information for the blanks.

LAB CONTROL SAMPLES

The Lab Control Sample Reports, one for each Lab Control Sample relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

REPORT GUIDES

Page 1

SUMMARY DATA SECTION

Page 1

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 07/14/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2195

SDG 7508

Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford

Contract No. 630

Case no SDG H2195

ABOUT THE DATA SUMMARY SECTION

DUPLICATES

The Duplicate Reports, one for each Duplicate and Original sample pair relevant to the SDG, show all results, differences and primary supporting information for these QC samples.

MATRIX SPIKES

The Matrix Spike Reports, one for each Spiked and Original sample pair relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

DATA SHEETS

The Data Sheet Reports, one for each client sample in the SDG, show all results and primary supporting information for these samples.

METHOD SUMMARIES

The Method Summary Reports, one for each test used in the SDG, show all results, QC and method performance data for one analyte on one or two pages. (A test is a short code for the method used to do certain work to the client's specification.)

REPORT GUIDES

The Report Guides, one for each of the above groups of reports, have documentation on how to read the associated reports.

REPORT GUIDES

Page 2

SUMMARY DATA SECTION

Page 2

Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-RG

Version 3.06

Report date 07/14/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2195

SDG 7508

Contact Melissa C. Mannion

LAB SAMPLE SUMMARY

Client Hanford

Contract No. 630

Case no SDG H2195

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
R305021-01	B16W84	216-A-37 (C4106)	SOLID		F03-006	F03-006-67	04/30/03 09:00
R305021-02	B16W85	216-A-37 (C4106)	SOLID		F03-006	F03-006-68	04/30/03 12:38
R305021-03	B16W86	216-A-37 (C4106)	SOLID		F03-006	F03-006-69	05/05/03 09:00
R305021-04	B16W87	216-A-37 (C4106)	SOLID		F03-006	F03-006-70	05/06/03 09:45
R305021-05	B16W88	216-A-37 (C4106)	SOLID		F03-006	F03-006-71	05/07/03 10:50
R305021-06	Lab Control Sample		SOLID		F03-006		
R305021-07	Method Blank		SOLID		F03-006		
R305021-08	Duplicate (R305021-04)	216-A-37 (C4106)	SOLID		F03-006		05/06/03 09:45
R305021-09	Spike (R305021-04)	216-A-37 (C4106)	SOLID		F03-006		05/06/03 09:45
R305021-10	Lab Control Sample		SOLID		F03-006		
R305021-11	Method Blank		SOLID		F03-006		
R305021-12	Duplicate (R305021-04)	216-A-37 (C4106)	SOLID		F03-006		05/06/03 09:45

LAB SUMMARY

Page 1

SUMMARY DATA SECTION

Page 3

Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-LS

Version 3.06

Report date 07/14/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2195

SDG 7508

Contact Melissa C. Mannion

QC SUMMARY

Client Hanford

Contract No. 630

Case no SDG H2195

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	LAB COLL SAMPLE ID	DEPARTMENT SAMPLE ID
7508	F03-006-67	B16W84	SOLID	91.0	132.3 g		05/05/03 5	R305021-01	7508-001
	F03-006-68	B16W85	SOLID	90.5	142.8 g		05/05/03 5	R305021-02	7508-002
	F03-006-69	B16W86	SOLID	97.0	150.6 g		05/08/03 3	R305021-03	7508-003
	F03-006-70	B16W87	SOLID	97.6	178.8 g		05/08/03 2	R305021-04	7508-004
	F03-006-71	B16W88	SOLID	98.3	191.3 g		05/09/03 2	R305021-05	7508-005
		Method Blank	SOLID					R305021-07	7508-007
		Method Blank	SOLID					R305021-11	7508-011
		Lab Control Sample	SOLID					R305021-06	7508-006
		Lab Control Sample	SOLID					R305021-10	7508-010
		Duplicate (R305021-04)	SOLID	97.6	178.8 g		05/08/03 2	R305021-08	7508-008
		Duplicate (R305021-04)	SOLID	97.6	178.8 g		05/08/03 2	R305021-12	7508-012
		Spike (R305021-04)	SOLID	97.6	178.8 g		05/08/03 2	R305021-09	7508-009

QC SUMMARY

Page 1

SUMMARY DATA SECTION

Page 4

Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-QS

Version 3.06

Report date 07/14/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2195

SDG 7508
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
Contract No. 630
Case no SDG H2195

TEST	MATRIX	METHOD	PREPARATION	ERROR	PLANCHETS ANALYZED				QUALI-		
			BATCH	2σ %	CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG
Alpha Spectroscopy											
NP	SOLID	Neptunium in Soil	7060-157	5.0	5			1	1	1/1	
TH	SOLID	Thorium, Isotopic in Soil	7060-157	5.0	5			1	1	1/1	
Beta Counting											
SR	SOLID	Total Strontium in Soil	7060-157	10.0	5			1	1	1/1	
TC	SOLID	Technetium 99 in Soil	7060-157	10.0	5			1	1	1/1	
Gamma Spectroscopy											
I	SOLID	Iodine 129 in Soil	7060-157	10.0	5			1	1	1/1	
Liquid Scintillation Counting											
C	SOLID	Carbon 14 in Soil	7060-157	10.0	5			1	1	1/1	
H	SOLID	Tritium in Soil	7060-157	10.0	5			1	1	1/1	1/1 X
NI_L	SOLID	Nickel 63 in Soil	7060-157	10.0	5			1	1	1/1	

Duplicates and Matrix Spikes are those with original (Client) sample in this Sample Delivery Group.

Blank and LCS planchets are those in the same preparation batch as some Client, Duplicate or Spike sample.

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2195

SDG 7508

Contact Melissa C. Mannion

LAB WORK SUMMARY

Client Hanford

Contract No. 630

Case no SDG H2195

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF- FIX	ANALYZED	REVIEWED	BY	METHOD
R305021-01	B16W84			7508-001	C		06/13/03	06/24/03	MCM	Carbon 14 in Soil
04/30/03	216-A-37 (C4106)		SOLID	7508-001	H		06/14/03	06/24/03	MCM	Tritium in Soil
05/05/03	F03-006-67	F03-006		7508-001	I		06/13/03	06/24/03	MCM	Iodine 129 in Soil
				7508-001	NI_L		06/06/03	06/24/03	MCM	Nickel 63 in Soil
				7508-001	NP		06/10/03	06/24/03	MCM	Neptunium in Soil
				7508-001	SR		06/09/03	06/24/03	MCM	Total Strontium in Soil
				7508-001	TC		06/20/03	06/24/03	MCM	Technetium 99 in Soil
				7508-001	TH	A1	07/09/03	07/14/03	MCM	Thorium, Isotopic in Soil
R305021-02	B16W85			7508-002	C		06/13/03	06/24/03	MCM	Carbon 14 in Soil
04/30/03	216-A-37 (C4106)		SOLID	7508-002	H		06/15/03	06/24/03	MCM	Tritium in Soil
05/05/03	F03-006-68	F03-006		7508-002	I		06/14/03	06/24/03	MCM	Iodine 129 in Soil
				7508-002	NI_L		06/06/03	06/24/03	MCM	Nickel 63 in Soil
				7508-002	NP		06/10/03	06/24/03	MCM	Neptunium in Soil
				7508-002	SR		06/09/03	06/24/03	MCM	Total Strontium in Soil
				7508-002	TC		06/20/03	06/24/03	MCM	Technetium 99 in Soil
				7508-002	TH	A1	07/09/03	07/14/03	MCM	Thorium, Isotopic in Soil
R305021-03	B16W86			7508-003	C		06/13/03	06/24/03	MCM	Carbon 14 in Soil
05/05/03	216-A-37 (C4106)		SOLID	7508-003	H		06/15/03	06/24/03	MCM	Tritium in Soil
05/08/03	F03-006-69	F03-006		7508-003	I		06/15/03	06/24/03	MCM	Iodine 129 in Soil
				7508-003	NI_L		06/06/03	06/24/03	MCM	Nickel 63 in Soil
				7508-003	NP		06/10/03	06/24/03	MCM	Neptunium in Soil
				7508-003	SR		06/09/03	06/24/03	MCM	Total Strontium in Soil
				7508-003	TC		06/20/03	06/24/03	MCM	Technetium 99 in Soil
				7508-003	TH	A1	07/08/03	07/14/03	MCM	Thorium, Isotopic in Soil
R305021-04	B16W87			7508-004	C		06/13/03	06/24/03	MCM	Carbon 14 in Soil
05/06/03	216-A-37 (C4106)		SOLID	7508-004	H		06/15/03	06/24/03	MCM	Tritium in Soil
05/08/03	F03-006-70	F03-006		7508-004	I		06/16/03	06/24/03	MCM	Iodine 129 in Soil
				7508-004	NI_L		06/06/03	06/24/03	MCM	Nickel 63 in Soil
				7508-004	NP		06/10/03	06/24/03	MCM	Neptunium in Soil
				7508-004	SR		06/09/03	06/24/03	MCM	Total Strontium in Soil
				7508-004	TC		06/23/03	06/24/03	MCM	Technetium 99 in Soil
				7508-004	TH	A1	07/08/03	07/14/03	MCM	Thorium, Isotopic in Soil

WORK SUMMARY

Page 1

SUMMARY DATA SECTION

Page 6

Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-LWS

Version 3.06

Report date 07/14/03

EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP H2195

SDG 7508
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. 630
Case no SDG H2195

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF- FIX	ANALYZED	REVIEWED	BY	METHOD
R305021-05	B16W88			7508-005	C		06/13/03	06/24/03	MCM	Carbon 14 in Soil
05/07/03	216-A-37 (C4106)		SOLID	7508-005	H		06/15/03	06/24/03	MCM	Tritium in Soil
05/09/03	F03-006-71	F03-006		7508-005	I		06/16/03	06/24/03	MCM	Iodine 129 in Soil
				7508-005	NI_L		06/07/03	06/24/03	MCM	Nickel 63 in Soil
				7508-005	NP		06/10/03	06/24/03	MCM	Neptunium in Soil
				7508-005	SR		06/09/03	06/24/03	MCM	Total Strontium in Soil
				7508-005	TC		06/22/03	06/24/03	MCM	Technetium 99 in Soil
				7508-005	TH	A1	07/08/03	07/14/03	MCM	Thorium, Isotopic in Soil
R305021-06	Lab Control Sample			7508-006	C		06/13/03	06/24/03	MCM	Carbon 14 in Soil
			SOLID	7508-006	H		06/15/03	06/24/03	MCM	Tritium in Soil
		F03-006		7508-006	I		06/17/03	06/24/03	MCM	Iodine 129 in Soil
				7508-006	NI_L		06/07/03	06/24/03	MCM	Nickel 63 in Soil
				7508-006	NP		06/10/03	06/24/03	MCM	Neptunium in Soil
				7508-006	SR		06/09/03	06/24/03	MCM	Total Strontium in Soil
				7508-006	TC		06/20/03	06/24/03	MCM	Technetium 99 in Soil
R305021-07	Method Blank			7508-007	C		06/13/03	06/24/03	MCM	Carbon 14 in Soil
			SOLID	7508-007	H		06/15/03	06/24/03	MCM	Tritium in Soil
		F03-006		7508-007	I		06/18/03	06/24/03	MCM	Iodine 129 in Soil
				7508-007	NI_L		06/07/03	06/24/03	MCM	Nickel 63 in Soil
				7508-007	NP		06/10/03	06/24/03	MCM	Neptunium in Soil
				7508-007	SR		06/09/03	06/24/03	MCM	Total Strontium in Soil
				7508-007	TC		06/23/03	06/24/03	MCM	Technetium 99 in Soil
R305021-08	Duplicate (R305021-04)			7508-008	C		06/13/03	06/24/03	MCM	Carbon 14 in Soil
05/06/03	216-A-37 (C4106)		SOLID	7508-008	H		06/15/03	06/24/03	MCM	Tritium in Soil
05/08/03		F03-006		7508-008	I		06/19/03	06/24/03	MCM	Iodine 129 in Soil
				7508-008	NI_L		06/07/03	06/24/03	MCM	Nickel 63 in Soil
				7508-008	NP		06/10/03	06/24/03	MCM	Neptunium in Soil
				7508-008	SR		06/09/03	06/24/03	MCM	Total Strontium in Soil
				7508-008	TC		06/23/03	06/24/03	MCM	Technetium 99 in Soil
R305021-09	Spike (R305021-04)			7508-009	H		06/15/03	06/24/03	MCM	Tritium in Soil
05/06/03	216-A-37 (C4106)		SOLID							
05/08/03		F03-006								

WORK SUMMARY

Page 2

SUMMARY DATA SECTION

Page 7

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 07/14/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2195

SDG 7508

Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford

Contract No. 630

Case no SDG H2195

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	MATRIX SAF No	PLANCHET	TEST	SUF- FIX	ANALYZED	REVIEWED	BY	METHOD
R305021-10	Lab Control Sample	SOLID F03-006	7508-010	TH		07/04/03	07/14/03	MCM	Thorium, Isotopic in Soil
R305021-11	Method Blank	SOLID F03-006	7508-011	TH		07/09/03	07/14/03	MCM	Thorium, Isotopic in Soil
R305021-12	Duplicate (R305021-04)	SOLID	7508-012	TH		07/04/03	07/14/03	MCM	Thorium, Isotopic in Soil
05/06/03	216-A-37 (C4106)								
05/08/03		F03-006							

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP	SPIKE	TOTAL
C	F03-006	Carbon 14 in Soil	C14_COX_LSC	5			1	1	1		8
H	F03-006	Tritium in Soil	906.0_H3_LSC	5			1	1	1	1	9
I	F03-006	Iodine 129 in Soil	I129_SEP_LEPS_GS	5			1	1	1		8
NI_L	F03-006	Nickel 63 in Soil	NI63_LSC	5			1	1	1		8
NP	F03-006	Neptunium in Soil	NP237_LLE_PLATE_AEA	5			1	1	1		8
SR	F03-006	Total Strontium in Soil	SRTOT_SEP_PRECIP_GPC	5			1	1	1		8
TC	F03-006	Technetium 99 in Soil	TC99_TR_SEP_LSC	5			1	1	1		8
TH	F03-006	Thorium, Isotopic in Soil	THISO_IE_PLATE_AEA	5			1	1	1		8
TOTALS				40			8	8	8	1	65

WORK SUMMARY

Page 3

SUMMARY DATA SECTION

Page 8

Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-LWS

Version 3.06

Report date 07/14/03

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H2195

7508-007

Method Blank

METHOD BLANK

SDG <u>7508</u>	Client/Case no <u>Hanford</u>	SDG <u>H2195</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R305021-07</u>	Client sample id <u>Method Blank</u>	
Dept sample id <u>7508-007</u>	Material/Matrix <u>SOLID</u>	
	SAF No <u>F03-006</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Tritium	10028-17-8	0.077	0.17	0.28	400	U	H
Carbon 14	14762-75-5	1.37	1.9	3.1	50	U	C
Nickel 63	13981-37-8	-0.966	1.3	2.2	30	U	NI_L
Total Strontium	SR-RAD	-0.091	0.15	0.33	1.0	U	SR
Technetium 99	14133-76-7	0.108	0.30	0.58	15	U	TC
Neptunium 237	13994-20-2	0	0.080	0.12	1.0	U	NP
Iodine 129	15046-84-1	0.164	0.26	0.58	2.0	U	I

200-PW-2/200-PW-4 OU-Borehole Soil

QC-BLANK #44725

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>07/14/03</u>

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H2195

7508-011

Method Blank

METHOD BLANK

SDG <u>7508</u>	Client/Case no <u>Hanford</u>	SDG <u>H2195</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R305021-11</u>	Client sample id <u>Method Blank</u>	
Dept sample id <u>7508-011</u>	Material/Matrix <u>SOLID</u>	
	SAF No <u>F03-006</u>	

ANALYTE	CAS NO	RESULT pCi/g	2 σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Thorium 228	14274-82-9	0.063	0.084	0.16		U	TH
Thorium 230	14269-63-7	0.104	0.12	0.20	1.0	U	TH
Thorium 232	TH-232	0.021	0.042	0.16	1.0	U	TH

200-PW-2/200-PW-4 OU-Borehole Soil

QC-BLANK 45048

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>07/14/03</u>

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2195

7508-006

Lab Control Sample

LAB CONTROL SAMPLE

SDG <u>7508</u> Contact <u>Melissa C. Mannion</u> Lab sample id <u>R305021-06</u> Dept sample id <u>7508-006</u>	Client/Case no <u>Hanford</u> SDG <u>H2195</u> Contract No. <u>630</u> Client sample id <u>Lab Control Sample</u> Material/Matrix _____ <u>SOLID</u> SAF No <u>F03-006</u>
---	--

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Tritium	13.3	0.43	0.27	400		H	13.8	0.55	96	84-116	80-120
Carbon 14	1830	19	4.5	50		C	1980	79	92	85-115	80-120
Nickel 63	257	4.5	2.1	30		NI_L	274	11	94	84-116	80-120
Total Strontium	23.2	1.1	0.35	1.0		SR	22.1	0.88	105	82-118	80-120
Technetium 99	131	2.7	0.65	15		TC	120	4.8	109	82-118	80-120
Neptunium 237	18.6	1.8	0.11	1.0		NP	21.8	0.87	85	85-115	80-120
Iodine 129	138	0.92	1.0	2.0		I	127	5.1	109	83-117	80-120

200-PW-2/200-PW-4 OU-Borehole Soil

QC-LCS #44724

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-LCS</u>
Version <u>3.06</u>
Report date <u>07/14/03</u>

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2195

7508-010

Lab Control Sample

LAB CONTROL SAMPLE

SDG <u>7508</u>	Client/Case no <u>Hanford</u>	SDG <u>H2195</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>No. 630</u>	
Lab sample id <u>R305021-10</u>	Client sample id <u>Lab Control Sample</u>	
Dept sample id <u>7508-010</u>	Material/Matrix <u>SOLID</u>	
	SAF No <u>F03-006</u>	

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Thorium 230	41.8	3.5	0.24	1.0		TH	40.8	1.6	102	84-116	80-120

200-PW-2/200-PW-4 OU-Borehole Soil

QC-LCS 45047

LAB CONTROL SAMPLES

Page 2

SUMMARY DATA SECTION

Page 12

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-LCS</u>
Version <u>3.06</u>
Report date <u>07/14/03</u>

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2195

7508-008

B16W87

DUPLICATE

SDG <u>7508</u>		Client/Case no <u>Hanford</u>		SDG <u>H2195</u>
Contact <u>Melissa C. Mannion</u>		Contract <u>No. 630</u>		
DUPLICATE		ORIGINAL		
Lab sample id <u>R305021-08</u>	Lab sample id <u>R305021-04</u>	Client sample id <u>B16W87</u>		
Dept sample id <u>7508-008</u>	Dept sample id <u>7508-004</u>	Location/Matrix <u>216-A-37 (C4106)</u>		
	Received <u>05/08/03</u>	Collected/Weight <u>05/06/03 09:45</u> <u>178.8 g</u>		
% solids <u>97.6</u>	% solids <u>97.6</u>	Custody/SAF No <u>F03-006-70</u> <u>F03-006</u>		

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI- FIERS	RPD %	3σ PROT TOT LIMIT
Tritium	86.7	0.88	0.18	400		H	79.6	0.80	0.17		9	21
Carbon 14	1.00	1.8	3.0	50	U	C	0.420	1.7	2.9	U	-	
Nickel 63	-0.501	1.4	2.4	30	U	NI_L	-0.472	1.5	2.6	U	-	
Total Strontium	0.050	0.20	0.39	1.0	U	SR	0.091	0.16	0.31	U	-	
Technetium 99	0.042	0.19	0.52	15	U	TC	0.135	0.32	0.60	U	-	
Neptunium 237	0	0.089	0.13	1.0	U	NP	0	0.075	0.11	U	-	
Iodine 129	0.022	0.62	1.4	2.0	U	I	-0.355	0.75	1.7	U	-	

200-PW-2/200-PW-4 OU-Borehole Soil

QC-DUP#4 44726

DUPLICATES

Page 1

SUMMARY DATA SECTION

Page 13

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DUP</u>
Version <u>3.06</u>
Report date <u>07/14/03</u>

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2195

7508-012

B16W87

DUPLICATE

SDG <u>7508</u>		Client/Case no <u>Hanford</u>		SDG <u>H2195</u>
Contact <u>Melissa C. Mannion</u>		Contract No. <u>630</u>		
DUPLICATE		ORIGINAL		
Lab sample id <u>R305021-12</u>	Lab sample id <u>R305021-04</u>	Client sample id <u>B16W87</u>		
Dept sample id <u>7508-012</u>	Dept sample id <u>7508-004</u>	Location/Matrix <u>216-A-37 (C4106)</u> <u>SOLID</u>		
	Received <u>05/08/03</u>	Collected/Weight <u>05/06/03 09:45</u> <u>178.8 g</u>		
% solids <u>97.6</u>	% solids <u>97.6</u>	Custody/SAF No <u>F03-006-70</u> <u>F03-006</u>		

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI- FIERS	RPD %	3σ PROT TOT LIMIT
Thorium 228	0.441	0.23	0.18			TH	0.517	0.32	0.30		16	124
Thorium 230	0.602	0.23	0.22	1.0		TH	0.474	0.32	0.30		24	110
Thorium 232	0.416	0.19	0.18	1.0		TH	0.553	0.32	0.30		28	116

200-PW-2/200-PW-4 OU-Borehole Soil

QC-DUP#4A1 45049

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2195

7508-009

B16W87

MATRIX SPIKE

SDG <u>7508</u>		Client/Case no <u>Hanford</u>		SDG <u>H2195</u>
Contact <u>Melissa C. Mannion</u>		Contract No. <u>630</u>		
MATRIX SPIKE		ORIGINAL		
Lab sample id <u>R305021-09</u>	Lab sample id <u>R305021-04</u>	Client sample id <u>B16W87</u>		
Dept sample id <u>7508-009</u>	Dept sample id <u>7508-004</u>	Location/Matrix <u>216-A-37 (C4106)</u> SOLID		
	Received <u>05/08/03</u>	Collected/Weight <u>05/06/03 09:45</u> <u>178.8 g</u>		
% solids <u>97.6</u>	% solids <u>97.6</u>	Custody/SAF No <u>F03-006-70</u> <u>F03-006</u>		

ANALYTE	SPIKE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	ORIGINAL pCi/g	2σ ERR (COUNT)	REC 3σ % (TOTAL)	LMTS LIMITS	PROTOCOL
Tritium	125	1.3	0.25	400	X	H	54.1	2.2	79.6	0.80	84	58-142	60-140

200-PW-2/200-PW-4 OU-Borehole Soil

QC-MS#4 44727

MATRIX SPIKES

Page 1

SUMMARY DATA SECTION

Page 15

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-MS</u>
Version <u>3.06</u>
Report date <u>07/14/03</u>

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H2195

7508-001

B16W84

DATA SHEET

SDG <u>7508</u>	Client/Case no <u>Hanford</u>	SDG <u>H2195</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R305021-01</u>	Client sample id <u>B16W84</u>	
Dept sample id <u>7508-001</u>	Location/Matrix <u>216-A-37 (C4106)</u>	<u>SOLID</u>
Received <u>05/05/03</u>	Collected/Weight <u>04/30/03 09:00</u>	<u>132.3 g</u>
% solids <u>91.0</u>	Custody/SAF No <u>F03-006-67</u>	<u>F03-006</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Tritium	10028-17-8	175	1.8	0.26	400		H
Carbon 14	14762-75-5	-0.040	1.7	2.9	50	U	C
Nickel 63	13981-37-8	-0.227	1.5	2.5	30	U	NI_L
Total Strontium	SR-RAD	0.073	0.17	0.33	1.0	U	SR
Technetium 99	14133-76-7	0.307	0.35	0.64	15	U	TC
Thorium 228	14274-82-9	0.354	0.17	0.16			TH
Thorium 230	14269-63-7	0.621	0.25	0.20	1.0		TH
Thorium 232	TH-232	0.373	0.17	0.16	1.0		TH
Neptunium 237	13994-20-2	0	0.066	0.099	1.0	U	NP
Iodine 129	15046-84-1	-0.084	0.56	1.3	2.0	U	I

200-PW-2/200-PW-4 OU-Borehole Soil

DATA SHEETS

Page 1

SUMMARY DATA SECTION

Page 16

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>07/14/03</u>

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H2195

7508-002

B16W85

DATA SHEET

SDG <u>7508</u>	Client/Case no <u>Hanford</u>	SDG <u>H2195</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R305021-02</u>	Client sample id <u>B16W85</u>	
Dept sample id <u>7508-002</u>	Location/Matrix <u>216-A-37 (C4106)</u>	<u>SOLID</u>
Received <u>05/05/03</u>	Collected/Weight <u>04/30/03 12:38</u>	<u>142.8 g</u>
% solids <u>90.5</u>	Custody/SAF No <u>F03-006-68</u>	<u>F03-006</u>

ANALYTE	CAS NO	RESULT pCi/g	2 σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Tritium	10028-17-8	225	2.3	0.31	400		H
Carbon 14	14762-75-5	0.596	1.9	3.1	50	U	C
Nickel 63	13981-37-8	-1.75	1.4	2.4	30	U	NI_L
Total Strontium	SR-RAD	0.023	0.16	0.33	1.0	U	SR
Technetium 99	14133-76-7	0.170	0.30	0.55	15	U	TC
Thorium 228	14274-82-9	0.480	0.19	0.14			TH
Thorium 230	14269-63-7	0.587	0.26	0.31	1.0		TH
Thorium 232	TH-232	0.367	0.15	0.14	1.0		TH
Neptunium 237	13994-20-2	0.077	0.077	0.12	1.0	U	NP
Iodine 129	15046-84-1	-0.204	0.52	1.2	2.0	U	I

200-PW-2/200-PW-4 OU-Borehole Soil

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>07/14/03</u>

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H2195

7508-003

B16W86

DATA SHEET

SDG <u>7508</u>	Client/Case no <u>Hanford</u>	SDG <u>H2195</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R305021-03</u>	Client sample id <u>B16W86</u>	
Dept sample id <u>7508-003</u>	Location/Matrix <u>216-A-37 (C4106)</u>	<u>SOLID</u>
Received <u>05/08/03</u>	Collected/Weight <u>05/05/03 09:00</u>	<u>150.6 g</u>
% solids <u>97.0</u>	Custody/SAF No <u>F03-006-69</u>	<u>F03-006</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Tritium	10028-17-8	83.2	0.84	0.17	400		H
Carbon 14	14762-75-5	-0.340	1.5	2.6	50	U	C
Nickel 63	13981-37-8	-1.29	1.4	2.4	30	U	NI_L
Total Strontium	SR-RAD	-0.004	0.15	0.32	1.0	U	SR
Technetium 99	14133-76-7	0.109	0.34	0.57	15	U	TC
Thorium 228	14274-82-9	0.664	0.35	0.27			TH
Thorium 230	14269-63-7	0.799	0.35	0.27	1.0		TH
Thorium 232	TH-232	0.382	0.21	0.27	1.0		TH
Neptunium 237	13994-20-2	0	0.082	0.12	1.0	U	NP
Iodine 129	15046-84-1	-0.062	0.56	1.3	2.0	U	I

200-PW-2/200-PW-4 OU-Borehole Soil

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>07/14/03</u>

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H2195

7508-004

B16W87

DATA SHEET

SDG <u>7508</u>	Client/Case no <u>Hanford</u>	SDG <u>H2195</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R305021-04</u>	Client sample id <u>B16W87</u>	
Dept sample id <u>7508-004</u>	Location/Matrix <u>216-A-37 (C4106)</u>	<u>SOLID</u>
Received <u>05/08/03</u>	Collected/Weight <u>05/06/03 09:45</u>	<u>178.8 g</u>
% solids <u>97.6</u>	Custody/SAF No <u>F03-006-70</u>	<u>F03-006</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Tritium	10028-17-8	79.6	0.80	0.17	400		H
Carbon 14	14762-75-5	0.420	1.7	2.9	50	U	C
Nickel 63	13981-37-8	-0.472	1.5	2.6	30	U	NI_L
Total Strontium	SR-RAD	0.091	0.16	0.31	1.0	U	SR
Technetium 99	14133-76-7	0.135	0.32	0.60	15	U	TC
Thorium 228	14274-82-9	0.517	0.32	0.30			TH
Thorium 230	14269-63-7	0.474	0.32	0.30	1.0		TH
Thorium 232	TH-232	0.553	0.32	0.30	1.0		TH
Neptunium 237	13994-20-2	0	0.075	0.11	1.0	U	NP
Iodine 129	15046-84-1	-0.355	0.75	1.7	2.0	U	I

200-PW-2/200-PW-4 OU-Borehole Soil

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>07/14/03</u>

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H2195

7508-005

B16W88

DATA SHEET

SDG <u>7508</u>	Client/Case no <u>Hanford</u>	SDG <u>H2195</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R305021-05</u>	Client sample id <u>B16W88</u>	
Dept sample id <u>7508-005</u>	Location/Matrix <u>216-A-37 (C4106)</u>	<u>SOLID</u>
Received <u>05/09/03</u>	Collected/Weight <u>05/07/03 10:50</u>	<u>191.3 g</u>
% solids <u>98.3</u>	Custody/SAF No <u>F03-006-71</u>	<u>F03-006</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Tritium	10028-17-8	44.0	0.58	0.16	400		H
Carbon 14	14762-75-5	0.543	1.6	2.6	50	U	C
Nickel 63	13981-37-8	-0.101	1.4	2.4	30	U	NI_L
Total Strontium	SR-RAD	0.119	0.18	0.35	1.0	U	SR
Technetium 99	14133-76-7	0.163	0.31	0.56	15	U	TC
Thorium 228	14274-82-9	0.277	0.21	0.26			TH
Thorium 230	14269-63-7	0.447	0.28	0.26	1.0		TH
Thorium 232	TH-232	0.344	0.21	0.26	1.0		TH
Neptunium 237	13994-20-2	0	0.069	0.10	1.0	U	NP
Iodine 129	15046-84-1	-0.510	0.80	1.8	2.0	U	I

200-PW-2/200-PW-4 OU-Borehole Soil

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>07/14/03</u>

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2195

Test NP Matrix SOLID
SDG 7508
Contact Melissa C. Mannion

LAB METHOD SUMMARY

NEPTUNIUM IN SOIL
ALPHA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG H2195

RESULTS

LAB	RAW	SUF-		Neptunium
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	237.
Preparation batch 7060-157				
R305021-01		7508-001	B16W84	U
R305021-02		7508-002	B16W85	U
R305021-03		7508-003	B16W86	U
R305021-04		7508-004	B16W87	U
R305021-05		7508-005	B16W88	U
R305021-06		7508-006	LCS (QC ID=44724)	ok
R305021-07		7508-007	BLK (QC ID=44725)	U
R305021-08		7508-008	Duplicate (R305021-04)	- U

Nominal values and limits from method RDLs (pCi/g) 1.0
200-PW-2/200-PW-4 OU-Borehole Soil

METHOD PERFORMANCE

LAB	RAW	SUF-		MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS		ANAL-	
SAMPLE ID	TEST	FIX	CLIENT SAMPLE ID	pCi/g	g	FAC	TION	%	%	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR
Preparation batch 7060-157 2σ prep error 5.0 % Reference Lab Notebook 7060 pg. 157																
R305021-01			B16W84	0.099	0.500			82		102			41	06/10/03	06/10	SS-005
R305021-02			B16W85	0.12	0.500			68		102			41	06/10/03	06/10	SS-006
R305021-03			B16W86	0.12	0.500			61		103			36	06/10/03	06/10	SS-008
R305021-04			B16W87	0.11	0.500			71		102			35	06/10/03	06/10	SS-009
R305021-05			B16W88	0.10	0.500			74		103			34	06/10/03	06/10	SS-010
R305021-06			LCS (QC ID=44724)	0.11	0.500			74		103				06/10/03	06/10	SS-011
R305021-07			BLK (QC ID=44725)	0.12	0.500			70		103				06/10/03	06/10	SS-013
R305021-08			Duplicate (R305021-04)	0.13	0.500			59		104			35	06/10/03	06/10	SS-015
			(QC ID=44726)													

Nominal values and limits from method 1.0 0.500 20-105 100 180

METHOD SUMMARIES

Page 1

SUMMARY DATA SECTION

Page 21

Lab id EBRLE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 07/14/03

EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP H2195

Test NP Matrix SOLID
SDG 7508
Contact Melissa C. Mannion

LAB METHOD SUMMARY, cont.
NEPTUNIUM IN SOIL
ALPHA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG H2195

PROCEDURES	REFERENCE	NP237_LLE_PLATE_AEA
	CP-060	Soil Preparation, rev 4
	CP-071	Soil Dissolution, > 1.0g Aliquot, rev 2
	CP-930	Neptunium from Solids and Water by Extraction Chromatography, rev 0
	CP-008	Heavy Element Electroplating, rev 7

AVERAGES \pm 2 SD	MDA	<u>0.11</u>	\pm	<u>0.022</u>
FOR 8 SAMPLES	YIELD	<u>70</u>	\pm	<u>15</u>

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 07/14/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2195

Test TH Matrix SOLID
SDG 7508
Contact Melissa C. Mannion

LAB METHOD SUMMARY

THORIUM, ISOTOPIC IN SOIL
ALPHA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG H2195

RESULTS

LAB RAW SUF-
SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Thorium 230

Preparation batch 7060-157

R305021-01	A1	7508-001	B16W84	0.621
R305021-02	A1	7508-002	B16W85	0.587
R305021-03	A1	7508-003	B16W86	0.799
R305021-04	A1	7508-004	B16W87	0.474
R305021-05	A1	7508-005	B16W88	0.447
R305021-10		7508-010	LCS (QC ID=45047)	ok
R305021-11		7508-011	BLK (QC ID=45048)	U
R305021-12		7508-012	Duplicate (R305021-04)	ok

Nominal values and limits from method RDLs (pCi/g) 1.0
200-PW-2/200-PW-4 OU-Borehole Soil

METHOD PERFORMANCE

LAB	RAW	SUF-	MAX MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS	ANAL-				
SAMPLE ID	TEST	FIX	CLIENT	SAMPLE ID	pCi/g	g	FAC	TION	%	%	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR

Preparation batch 7060-157 2σ prep error 5.0 % Reference Lab Notebook 7060 pg. 157

R305021-01	A1	B16W84	0.20	0.250	85	284	70	07/03/03	07/09	SS-028
R305021-02	A1	B16W85	0.31	0.250	98	284	70	07/03/03	07/09	SS-029
R305021-03	A1	B16W86	0.27	0.250	89	161	64	07/03/03	07/08	SS-028
R305021-04	A1	B16W87	0.30	0.250	80	162	63	07/03/03	07/08	SS-029
R305021-05	A1	B16W88	0.26	0.250	95	162	62	07/03/03	07/08	SS-042
R305021-10		LCS (QC ID=45047)	0.24	0.250	83	256		07/03/03	07/04	SS-059
R305021-11		BLK (QC ID=45048)	0.20	0.250	90	285		07/03/03	07/09	SS-042
R305021-12		Duplicate (R305021-04)	0.22	0.250	89	257	59	07/03/03	07/04	SS-062
		(QC ID=45049)								

Nominal values and limits from method 1.0 0.250 20-105 150 180

METHOD SUMMARIES

Page 3

SUMMARY DATA SECTION

Page 23

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 07/14/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2195

Test TH Matrix SOLID

SDG 7508

Contact Melissa C. Mannion

LAB METHOD SUMMARY, cont.

THORIUM, ISOTOPIC IN SOIL

ALPHA SPECTROSCOPY

Client Hanford

Contract No. 630

Contract SDG H2195

PROCEDURES	REFERENCE	THISO_IE_PLATE_AEA
	CP-060	Soil Preparation, rev 4
	CP-071	Soil Dissolution, > 1.0g Aliquot, rev 2
	CP-900	Thorium in Water and Dissolved Solid Samples by Extraction Chromatography, rev 1
	CP-008	Heavy Element Electroplating, rev 7

AVERAGES \pm 2 SD

MDA 0.25 \pm 0.085

FOR 8 SAMPLES

YIELD 89 \pm 12

METHOD SUMMARIES

Page 4

SUMMARY DATA SECTION

Page 24

Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-LMS

Version 3.06

Report date 07/14/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2195

Test SR Matrix SOLID
SDG 7508
Contact Melissa C. Mannion

LAB METHOD SUMMARY

TOTAL STRONTIUM IN SOIL

BETA COUNTING

Client Hanford
Contract No. 630
Contract SDG H2195

RESULTS

LAB	RAW	SUF-		Total
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Strontium
Preparation batch 7060-157				
R305021-01		7508-001	B16W84	U
R305021-02		7508-002	B16W85	U
R305021-03		7508-003	B16W86	U
R305021-04		7508-004	B16W87	U
R305021-05		7508-005	B16W88	U
R305021-06		7508-006	LCS (QC ID=44724)	ok
R305021-07		7508-007	BLK (QC ID=44725)	U
R305021-08		7508-008	Duplicate (R305021-04)	- U

Nominal values and limits from method RDLs (pCi/g) 1.0
200-PW-2/200-PW-4 OU-Borehole Soil

METHOD PERFORMANCE

LAB	RAW	SUF-		MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS		ANAL-	
SAMPLE ID	TEST	FIX	CLIENT SAMPLE ID	pCi/g	g	FAC	TION	%	%	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR
Preparation batch 7060-157 2σ prep error 10.0 % Reference Lab Notebook 7060 pg. 157																
R305021-01			B16W84	0.33	1.00			89		100			40	06/09/03	06/09	GRB-201
R305021-02			B16W85	0.33	1.00			84		100			40	06/09/03	06/09	GRB-202
R305021-03			B16W86	0.32	1.00			84		100			35	06/09/03	06/09	GRB-203
R305021-04			B16W87	0.31	1.00			90		100			34	06/09/03	06/09	GRB-204
R305021-05			B16W88	0.35	1.00			82		100			33	06/09/03	06/09	GRB-207
R305021-06			LCS (QC ID=44724)	0.35	1.00			77		<u>72</u>				06/09/03	06/09	GRB-223
R305021-07			BLK (QC ID=44725)	0.33	1.00			77		116				06/09/03	06/09	GRB-232
R305021-08			Duplicate (R305021-04)	0.39	1.00			86		100			34	06/09/03	06/09	GRB-224
			(QC ID=44726)													

Nominal values and limits from method 1.0 1.00 30-105 100 180

METHOD SUMMARIES

Page 5

SUMMARY DATA SECTION

Page 25

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 07/14/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2195

Test SR Matrix SOLID
SDG 7508
Contact Melissa C. Mannion

LAB METHOD SUMMARY, cont.

TOTAL STRONTIUM IN SOIL
BETA COUNTING

Client Hanford
Contract No. 630
Contract SDG H2195

PROCEDURES	REFERENCE	SRTOT_SEP_PRECIP_GPC
	CP-060	Soil Preparation, rev 4
	CP-071	Soil Dissolution, > 1.0g Aliquot, rev 2
	CP-381	Strontium in Solids, rev 1

AVERAGES \pm 2 SD	MDA	<u>0.34</u>	\pm	<u>0.049</u>
FOR 8 SAMPLES	YIELD	<u>84</u>	\pm	<u>10</u>

METHOD SUMMARIES

Page 6

SUMMARY DATA SECTION

Page 26

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 07/14/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2195

Test IC Matrix SOLID
SDG 7508
Contact Melissa C. Mannion

LAB METHOD SUMMARY
TECHNETIUM 99 IN SOIL
BETA COUNTING

Client Hanford
Contract No. 630
Contract SDG H2195

RESULTS

LAB	RAW	SUF-		Technetium
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	99
Preparation batch 7060-157				
R305021-01		7508-001	B16W84	U
R305021-02		7508-002	B16W85	U
R305021-03		7508-003	B16W86	U
R305021-04		7508-004	B16W87	U
R305021-05		7508-005	B16W88	U
R305021-06		7508-006	LCS (QC ID=44724)	ok
R305021-07		7508-007	BLK (QC ID=44725)	U
R305021-08		7508-008	Duplicate (R305021-04)	- U

Nominal values and limits from method RDLs (pCi/g) 15
200-PW-2/200-PW-4 OU-Borehole Soil

METHOD PERFORMANCE

LAB	RAW	SUF-		MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS		ANAL-	
SAMPLE ID	TEST	FIX	CLIENT SAMPLE ID	pCi/g	g	FAC	TION	%	%	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR
Preparation batch 7060-157 2σ prep error 10.0 % Reference Lab Notebook 7060 pg. 157																
R305021-01			B16W84	0.64	1.02			83		50			51	06/17/03	06/20	GRB-201
R305021-02			B16W85	0.55	1.03			89		50			51	06/17/03	06/20	GRB-202
R305021-03			B16W86	0.57	1.02			87		50			46	06/17/03	06/20	GRB-203
R305021-04			B16W87	0.60	1.02			84		50			48	06/17/03	06/23	GRB-217
R305021-05			B16W88	0.56	1.02			87		50			46	06/17/03	06/22	GRB-222
R305021-06			LCS (QC ID=44724)	0.65	1.00			90		50				06/17/03	06/20	GRB-208
R305021-07			BLK (QC ID=44725)	0.58	1.00			89		50				06/17/03	06/23	GRB-219
R305021-08			Duplicate (R305021-04)	0.52	1.02			92		50			48	06/17/03	06/23	GRB-220
			(QC ID=44726)													

Nominal values and limits from method 15 1.00 20-105 50 180

METHOD SUMMARIES

Page 7

SUMMARY DATA SECTION

Page 27

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 07/14/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2195

Test IC Matrix SOLID
SDG 7508
Contact Melissa C. Mannion

LAB METHOD SUMMARY, cont.

TECHNETIUM 99 IN SOIL
BETA COUNTING

Client Hanford
Contract No. 630
Contract SDG H2195

PROCEDURES	REFERENCE	TC99_TR_SEP_LSC
CP-071	Soil Dissolution, > 1.0g Aliquot, rev 2	
CP-021	Preparation of Tc-99m Tracer, rev 2	
CP-002	Q.C. Preparation, rev 4	
CP-003	Addition of Carriers and Tracers, rev 5	
CP-542	Technetium-99 Purification (Soil) by Extraction Chromatography, rev 2	
CP-008	Heavy Element Electroplating, rev 7	

AVERAGES \pm 2 SD	MDA	<u>0.58</u>	\pm	<u>0.089</u>
FOR 8 SAMPLES	YIELD	<u>88</u>	\pm	<u>6</u>

METHOD SUMMARIES

Page 8

SUMMARY DATA SECTION

Page 28

Lab id	<u>EBRLNE</u>
Protocol	<u>Hanford</u>
Version	<u>Ver 1.0</u>
Form	<u>DVD-LMS</u>
Version	<u>3.06</u>
Report date	<u>07/14/03</u>

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2195

Test I Matrix SOLID
 SDG 7508
 Contact Melissa C. Mannion

LAB METHOD SUMMARY

IODINE 129 IN SOIL
 GAMMA SPECTROSCOPY

Client Hanford
 Contract No. 630
 Contract SDG H2195

RESULTS

LAB RAW SUF-

SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Iodine 129

Preparation batch 7060-157

R305021-01	7508-001	B16W84	U
R305021-02	7508-002	B16W85	U
R305021-03	7508-003	B16W86	U
R305021-04	7508-004	B16W87	U
R305021-05	7508-005	B16W88	U
R305021-06	7508-006	LCS (QC ID=44724)	ok
R305021-07	7508-007	BLK (QC ID=44725)	U
R305021-08	7508-008	Duplicate (R305021-04)	- U

Nominal values and limits from method RDLs (pCi/g) 2.0
 200-PW-2/200-PW-4 OU-Borehole Soil

METHOD PERFORMANCE

LAB RAW SUF- MDA ALIQ PREP DILU- YIELD EFF COUNT FWHM DRIFT DAYS ANAL-
 SAMPLE ID TEST FIX CLIENT SAMPLE ID pCi/g g FAC TION % % min keV KeV HELD PREPARED YZED DETECTOR

Preparation batch 7060-157 2σ prep error 10.0 % Reference Lab Notebook 7060 pg. 157

R305021-01	B16W84	1.3	1.01	44	1349	44	06/10/03	06/13	XSPEC-004
R305021-02	B16W85	1.2	1.00	46	1446	45	06/10/03	06/14	XSPEC-004
R305021-03	B16W86	1.3	1.00	47	1006	41	06/10/03	06/15	XSPEC-004
R305021-04	B16W87	1.7	1.02	48	603	41	06/10/03	06/16	XSPEC-004
R305021-05	B16W88	1.8	1.00	38	1002	40	06/10/03	06/16	XSPEC-004
R305021-06	LCS (QC ID=44724)	1.0	1.00	86	1801		06/10/03	06/17	XSPEC-004
R305021-07	BLK (QC ID=44725)	0.58	1.00	91	859		06/10/03	06/18	XSPEC-004
R305021-08	Duplicate (R305021-04)	1.4	1.02	47	657	44	06/10/03	06/19	XSPEC-004

Nominal values and limits from method 2.0 1.00 20-105 300 180

PROCEDURES REFERENCE I129_SEP_LEPS_GS
 CP-024 Iodine-129, Sample Dissolution, rev 3
 CP-530 Iodine-129 Purification, rev 0

AVERAGES ± 2 SD MDA 1.3 ± 0.77
 FOR 8 SAMPLES YIELD 56 ± 41

METHOD SUMMARIES

Page 9

SUMMARY DATA SECTION

Page 29

Lab id EBRLNE
 Protocol Hanford
 Version Ver 1.0
 Form DVD-LMS
 Version 3.06
 Report date 07/14/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2195

Test C Matrix SOLID
SDG 7508
Contact Melissa C. Mannion

LAB METHOD SUMMARY

CARBON 14 IN SOIL
LIQUID SCINTILLATION COUNTING

Client Hanford
Contract No. 630
Contract SDG H2195

RESULTS

LAB RAW SUF-
SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Carbon 14

Preparation batch 7060-157

R305021-01	7508-001	B16W84	U
R305021-02	7508-002	B16W85	U
R305021-03	7508-003	B16W86	U
R305021-04	7508-004	B16W87	U
R305021-05	7508-005	B16W88	U
R305021-06	7508-006	LCS (QC ID=44724)	ok
R305021-07	7508-007	BLK (QC ID=44725)	U
R305021-08	7508-008	Duplicate (R305021-04)	- U

Nominal values and limits from method RDLs (pCi/g) 50
200-PW-2/200-PW-4 OU-Borehole Soil

METHOD PERFORMANCE

LAB	RAW	SUF-	MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS	ANAL-				
SAMPLE ID	TEST	FIX	CLIENT	SAMPLE ID	pCi/g	g	FAC	TION	%	%	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR
Preparation batch 7060-157 2σ prep error 10.0 % Reference Lab Notebook 7060 pg. 157																	
R305021-01			B16W84		2.9	0.348			100	100		44	06/12/03	06/13	LSC-006		
R305021-02			B16W85		3.1	0.322			100	100		44	06/12/03	06/13	LSC-006		
R305021-03			B16W86		2.6	0.378			100	100		39	06/12/03	06/13	LSC-006		
R305021-04			B16W87		2.9	0.338			100	100		38	06/12/03	06/13	LSC-006		
R305021-05			B16W88		2.6	0.376			100	100		37	06/12/03	06/13	LSC-006		
R305021-06			LCS (QC ID=44724)		4.5	0.322			100	46			06/12/03	06/13	LSC-006		
R305021-07			BLK (QC ID=44725)		3.1	0.322			100	100			06/12/03	06/13	LSC-006		
R305021-08			Duplicate (R305021-04)		3.0	0.326			100	100		38	06/12/03	06/13	LSC-006		
(QC ID=44726)																	

Nominal values and limits from method 50 0.322 50 180

PROCEDURES REFERENCE C14_COX_LSC
CP-251 Tritium/Carbon-14 Oxidation, rev 5

AVERAGES ± 2 SD MDA 3.1 ± 1.2
FOR 8 SAMPLES YIELD 100 ± 0

METHOD SUMMARIES

Page 10

SUMMARY DATA SECTION

Page 30

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 07/14/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2195

Test H Matrix SOLID
SDG 7508
Contact Melissa C. Mannion

LAB METHOD SUMMARY

TRITIUM IN SOIL

LIQUID SCINTILLATION COUNTING

Client Hanford
Contract No. 630
Contract SDG H2195

RESULTS

LAB	RAW	SUF-		
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Tritium
Preparation batch 7060-157				
R305021-01	7508-001	B16W84		175
R305021-02	7508-002	B16W85		225
R305021-03	7508-003	B16W86		83.2
R305021-04	7508-004	B16W87		79.6
R305021-05	7508-005	B16W88		44.0
R305021-06	7508-006	LCS (QC ID=44724)		ok
R305021-07	7508-007	BLK (QC ID=44725)		U
R305021-08	7508-008	Duplicate (R305021-04)		ok
R305021-09	7508-009	Spike (R305021-04)		ok X

Nominal values and limits from method RDLs (pCi/g) 400
200-PW-2/200-PW-4 OU-Borehole Soil

METHOD PERFORMANCE

LAB	RAW	SUF-	MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS	ANAL-
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID	pCi/g	g	FAC	TION	%	%	min	keV	KeV	HELD PREPARED	YZED DETECTOR
Preparation batch 7060-157 2σ prep error 10.0 % Reference Lab Notebook 7060 pg. 157													
R305021-01		B16W84	0.26	20.7			51	52				45 06/13/03 06/14	LSC-005
R305021-02		B16W85	0.31	21.2			50	43				46 06/13/03 06/15	LSC-005
R305021-03		B16W86	0.17	21.0			51	103				41 06/13/03 06/15	LSC-005
R305021-04		B16W87	0.17	21.5			53	106				40 06/13/03 06/15	LSC-005
R305021-05		B16W88	0.16	21.4			51	120				39 06/13/03 06/15	LSC-005
R305021-06		LCS (QC ID=44724)	0.27	20.0			33	120				06/13/03 06/15	LSC-005
R305021-07		BLK (QC ID=44725)	0.28	20.0			33	120				06/13/03 06/15	LSC-005
R305021-08		Duplicate (R305021-04)	0.18	21.3			50	104				40 06/13/03 06/15	LSC-005
		(QC ID=44726)											
R305021-09		Spike (R305021-04)	0.25	21.7			35	101				40 06/13/03 06/15	LSC-005
		(QC ID=44727)											

Nominal values and limits from method 400 20.0 25 180

METHOD SUMMARIES

Page 11

SUMMARY DATA SECTION

Page 31

Lab id EBRLE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 07/14/03

EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP H2195

Test H Matrix SOLID
SDG 7508
Contact Melissa C. Mannion

LAB METHOD SUMMARY, cont.
TRITIUM IN SOIL
LIQUID SCINTILLATION COUNTING

Client Hanford
Contract No. 630
Contract SDG H2195

PROCEDURES REFERENCE 906.0_H3_LSC
CP-216 Tritium in Solid Samples by Azeotropic
Distillation, rev 6

AVERAGES \pm 2 SD MDA 0.23 \pm 0.11
FOR 9 SAMPLES YIELD 45 \pm 17

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 07/14/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2195

Test NI L Matrix SOLID
SDG 7508
Contact Melissa C. Mannion

LAB METHOD SUMMARY

NICKEL 63 IN SOIL

LIQUID SCINTILLATION COUNTING

Client Hanford
Contract No. 630
Contract SDG H2195

RESULTS

LAB RAW SUF-
SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Nickel 63

Preparation batch 7060-157

R305021-01	7508-001	B16W84	U
R305021-02	7508-002	B16W85	U
R305021-03	7508-003	B16W86	U
R305021-04	7508-004	B16W87	U
R305021-05	7508-005	B16W88	U
R305021-06	7508-006	LCS (QC ID=44724)	ok
R305021-07	7508-007	BLK (QC ID=44725)	U
R305021-08	7508-008	Duplicate (R305021-04)	- U

Nominal values and limits from method RDLs (pCi/g) 30
200-PW-2/200-PW-4 OU-Borehole Soil

METHOD PERFORMANCE

LAB RAW SUF- MDA ALIQ PREP DILU- YIELD EFF COUNT FWHM DRIFT DAYS ANAL-
SAMPLE ID TEST FIX CLIENT SAMPLE ID pCi/g g FAC TION % % min keV KeV HELD PREPARED YZED DETECTOR

Preparation batch 7060-157 2σ prep error 10.0 % Reference Lab Notebook 7060 pg. 157

R305021-01	B16W84	2.5	0.500	86	100	37	06/06/03	06/06	LSC-006
R305021-02	B16W85	2.4	0.500	88	100	37	06/06/03	06/06	LSC-006
R305021-03	B16W86	2.4	0.500	90	100	32	06/06/03	06/06	LSC-006
R305021-04	B16W87	2.6	0.500	83	100	31	06/06/03	06/06	LSC-006
R305021-05	B16W88	2.4	0.500	86	100	31	06/06/03	06/07	LSC-006
R305021-06	LCS (QC ID=44724)	2.1	0.500	97	100		06/06/03	06/07	LSC-006
R305021-07	BLK (QC ID=44725)	2.2	0.500	97	100		06/06/03	06/07	LSC-006
R305021-08	Duplicate (R305021-04)	2.4	0.500	88	100	32	06/06/03	06/07	LSC-006
	(QC ID=44726)								

Nominal values and limits from method 30 0.500 30-105 50 180

METHOD SUMMARIES

Page 13

SUMMARY DATA SECTION

Page 33

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 07/14/03

EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP H2195

Test NI L Matrix SOLID
SDG 7508
Contact Melissa C. Mannion

LAB METHOD SUMMARY, cont.
NICKEL 63 IN SOIL
LIQUID SCINTILLATION COUNTING

Client Hanford
Contract No. 630
Contract SDG H2195

PROCEDURES	REFERENCE	NI63_LSC
	CP-060	Soil Preparation, rev 4
	CP-071	Soil Dissolution, > 1.0g Aliquot, rev 2
	CP-431	Nickel-63 Purification, rev 5

AVERAGES \pm 2 SD	MDA	<u>2.4</u>	\pm	<u>0.32</u>
FOR 8 SAMPLES	YIELD	<u>89</u>	\pm	<u>10</u>

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 07/14/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2195

SDG 7508
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG H2195

SAMPLE SUMMARY

The Sample and QC Summary Reports show all samples, including QC samples, reported in one Sample Delivery Group (SDG).

The Sample Summary Report fully identifies client samples and gives the corresponding lab sample identification. The QC Summary Report shows at the sample level how the lab organized the samples into batches and generated QC samples. The Preparation Batch and Method Summary Reports show this at the analysis level.

The following notes apply to these reports:

- * LAB SAMPLE ID is the lab's primary identification for a sample.
- * DEPARTMENT SAMPLE ID is an alternate lab id, for example one assigned by a radiochemistry department in a lab.
- * CLIENT SAMPLE ID is the client's primary identification for a sample. It includes any sample preparation done by the client that is necessary to identify the sample.
- * QC BATCH is a lab assigned code that groups samples to be processed and QCed together. These samples should have similar matrices.

QC BATCH is not necessarily the same as SDG, which reflects samples received and reported together.

- * All Lab Control Samples, Method Blanks, Duplicates and Matrix Spikes are shown that QC any of the samples. Due to possible reanalyses, not all results for all these QC samples may be relevant to the SDG. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

REPORT GUIDES

Page 1

SUMMARY DATA SECTION

Page 35

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 07/14/03

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H2195

SDG 7508
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG H2195

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches in one Sample Delivery Group (SDG) with information necessary to check the completeness and consistency of the SDG.

The following notes apply to this report:

- * The preparation batches are shown in the same order as the Method Summary Reports are printed.
- * Only analyses of planchets relevant to the SDG are included.
- * Each preparation batch should have at least one Method Blank and LCS in it to validate client sample results.
- * The QUALIFIERS shown are all qualifiers other than U, J, B, L and H that occur on any analysis in the preparation batch. The Method Summary Report has these qualifiers on a per sample basis.

These qualifiers should be reviewed as follows:

- X Some data has been manually entered or modified.
Transcription errors are possible.
- P One or more results are 'preliminary'. The data is not ready for final reporting.
- 2 There were two or more results for one analyte on one planchet imported at one time. The results in DVD may not be the same as on the raw data sheets.

Other lab defined qualifiers may occur. In general, these should be addressed in the SDG narrative.

REPORT GUIDES

Page 2

SUMMARY DATA SECTION

Page 36

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 07/14/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2195

SDG 7508
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG H2195

WORK SUMMARY

The Work Summary Report shows all samples, including QC samples, and all relevant analyses in one Sample Delivery Group (SDG). This report is often useful as supporting documentation for an invoice.

The following notes apply to this report:

- * TEST is a code for the method used to measure associated analytes. Results and related information for each analyte are on the Data Sheet Report. In special cases, a test code used in the summary data section is not the same as in associated raw data. In this case, both codes are shown on the Work Summary.
- * SUFFIX is the lab's code to distinguish multiple analyses (recounts, reworks, reanalyses) of a fraction of the sample. The suffix indicates which result is being reported. An empty suffix normally identifies the first attempt to analyze the sample.
- * The LAB SAMPLE ID, TEST and SUFFIX uniquely identify all supporting data for a result. The Method Summary Report for each TEST has method performance data, such as yield, for each lab sample id and suffix and procedures used in the method.
- * PLANCHET is an alternate lab identifier for work done for one test. It, combined with the TEST and SUFFIX, may be the best link to raw data.
- * For QC samples, only analyses that directly QC some regular sample are shown. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.
- * The SAS (Special Analytical Services) Number is a client or lab assigned code that reflects special processing for samples, such as rapid turn around. Counts of tests done are lists by SAS number since it is likely to affect prices.

REPORT GUIDES

Page 3

SUMMARY DATA SECTION

Page 37

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 07/14/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2195

SDG 7508

Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford

Contract No. 630

Case no SDG H2195

DATA SHEET

The Data Sheet Report shows all results and primary supporting information for one client sample or Method Blank. This report corresponds to both the CLP Inorganics and Organics Data Sheet.

The following notes apply to this report:

- * TEST is a code for the method used to measure an analyte. If the TEST is empty, no data is available; the analyte was not analyzed for.
- * The LAB SAMPLE ID and TEST uniquely identify work within the Summary Data Section of a Data Package. The Work Summary and Method Summary Reports further identify raw data that underlies this work.

The Method Summary Report for each TEST has method performance data, such as yield, for each Lab Sample ID and a list of procedures used in the method.

- * ERRORS can be labeled TOTAL or COUNT. TOTAL implies a preparation (non-counting method) error has been added, as square root of sum of squares, to the counting error denoted by COUNT. The preparation errors, which may vary by preparation batch, are shown on the Method Summary Report.
- * A RESULT can be 'N.R.' (Not Reported). This means the lab did this work but chooses not to report it now, possibly because it was reported at another time.
- * When reporting a Method Blank, a RESULT can be 'N.A.' (Not Applicable). This means there is no reported client sample work in the same preparation batch as the Blank's result. This is likely to occur when the Method Blank is associated with reanalyses of selected work for a few samples in the SDG.

The following qualifiers are defined by the DVD system:

U The RESULT is less than the MDA (Minimum Detectable Activity).

REPORT GUIDES

Page 4

SUMMARY DATA SECTION

Page 38

Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-RG

Version 3.06

Report date 07/14/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2195

SDG 7508
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG H2195

DATA SHEET

If the MDA is blank, the ERROR is used as the limit.

- J The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.
 - B A Method Blank associated with this sample had a result without a U flag and, after correcting for possibly different aliquots, that result is greater than or equal to the MDA for this sample.
- Normally, B is not assigned if U is. When method blank subtraction is shown on this report, B flags are assigned based on the unsubtracted values while U's are assigned based on the subtracted ones. Both flags can be assigned in this case.
- For each sample result, all Method Blank results in the same preparation batch are compared. The Method Summary Report documents this and other QC relationships.
- L Some Lab Control Sample that QC's this sample had a low recovery. The lab can disable assignment of this qualifier.
 - H Similar to 'L' except the recovery was high.
 - P The RESULT is 'preliminary'.
 - X Some data necessary to compute the RESULT, ERROR or MDA was manually entered or modified.
 - 2 There were two or more results available for this analyte. The reported result may not be the same as in the raw data.

Other qualifiers are lab defined. Definitions should be in the SDG narrative.

The following values are underlined to indicate possible problems:

- * An MDA is underlined if it is bigger than its RDL.

REPORT GUIDES

Page 5

SUMMARY DATA SECTION

Page 39

Lab id EBRINE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 07/14/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2195

SDG 7508
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG H2195

DATA SHEET

- * An ERROR is underlined if the 1.645 sigma counting error is bigger than both the MDA and the RESULT, implying that the MDA may not be a good estimate of the 'real' minimum detectable activity.
- * A negative RESULT is underlined if it is less than the negative of its 2 sigma counting ERROR.
- * When reporting a Method Blank, a RESULT is underlined if greater than its MDA. If the MDA is blank, the 2 sigma counting error is used in the comparison.

REPORT GUIDES

Page 6

SUMMARY DATA SECTION

Page 40

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 07/14/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2195

SDG 7508
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG H2195

LAB CONTROL SAMPLE

The Lab Control Sample Report shows all results, recoveries and primary supporting information for one Lab Control Sample.

The following notes apply to this report:

- * All fields in common with the Data Sheet Report have similar usage. Refer to its Report Guide for details.
- * An amount ADDED is the lab's value for the actual amount spiked into this sample with its ERROR an estimate of the error of this amount.

An amount added is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

- * REC (Recovery) is RESULT divided by ADDED expressed as a percent.
- * The first, computed limits for the recovery reflect:
 1. The error of RESULT, including that introduced by rounding the result prior to printing.

If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.
 2. The error of ADDED.
 3. A lab specified, per analyte bias. The bias changes the center of the computed limits.
- * The second limits are protocol defined upper and lower QC limits for the recovery.
- * The recovery is underlined if it is outside either of these ranges.

REPORT GUIDES

Page 7

SUMMARY DATA SECTION

Page 41

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 07/14/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2195

SDG 7508
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG H2195

DUPLICATE

The Duplicate Report shows all results, differences and primary supporting information for one Duplicate and associated Original sample.

The following notes apply to this report:

- * All fields in common with the Data Sheet Report have similar usage. This applies both to the Duplicate and Original sample data. Refer to the Data Sheet Report Guide for details.

If the Duplicate has data for a TEST and the lab did not do this test to the Original, the Original's RESULTS are underlined.

- * The RPD (Relative Percent Difference) is the absolute value of the difference of the RESULTS divided by their average expressed as a percent.

If both RESULTS are less than their MDAs, no RPD is computed and a '-' is printed.

For an analyte, if the lab did work for both samples but has data for only one, the MDA from the sample with data is used as the other's result in the RPD.

- * The first, computed limit is the sum, as square root of sum of squares, of the errors of the results divided by the average result as a percent, hence the relative error of the difference rather than the error of the relative difference. The errors include those introduced by rounding the RESULTS prior to printing.

If this limit is labeled TOT, it includes the preparation error in the RESULTS. If labeled CNT, it does not.

This value reported for this limit is at most 999.

- * The second limit for the RPD is the larger of:

1. A fixed percentage specified in the protocol.

REPORT GUIDES

Page 8

SUMMARY DATA SECTION

Page 42

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 07/14/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2195

SDG 7508
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG H2195

DUPLICATE

2. A protocol factor (typically 2) times the average MDA as a percent of the average result. This limit applies when the results are close to the MDAs.

- * The RPD is underlined if it is greater than either limit.
- * If specified by the lab, the second limit column is replaced by the Difference Error Ratio (DER), which is the absolute value of the difference of the results divided by the quadratic sum of their one sigma errors, the same errors as used in the first limit.

Except for differences due to rounding, the DER is the same as the RPD divided by the first RPD limit with the limit scaled to 1 sigma.

- * The DER is underlined if it is greater than the sigma factor, typically 2 or 3, shown in the header for the first RPD limit.

REPORT GUIDES

Page 9

SUMMARY DATA SECTION

Page 43

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 07/14/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2195

SDG 7508
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG H2195

MATRIX SPIKE

The Matrix Spike Report shows all results, recoveries and primary supporting information for one Matrix Spike and associated Original sample.

The following notes apply to this report:

- * All fields in common with the Data Sheet Report have similar usage. This applies both to the Spiked and Original sample data. Refer to the Data Sheet Report Guide for details.

If the Spike has data for a TEST and the lab did not do this test to the Original, the Original's RESULTS are underlined.

- * An amount ADDED is the lab's value for the actual amount spiked into the Spike sample with its ERROR an estimate of the error of this amount.

An amount is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

- * REC (Recovery) is the Spike RESULT minus the Original RESULT divided by ADDED expressed as a percent.

- * The first, computed limits for the recovery reflect:

1. The errors of the two RESULTS, including those introduced by rounding them prior to printing.

If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

2. The error of ADDED.

3. A lab specified, per analyte bias. The bias changes the center of the computed limits.

- * The second limits are protocol defined upper and lower QC limits

REPORT GUIDES

Page 10

SUMMARY DATA SECTION

Page 44

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 07/14/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2195

SDG 7508
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG H2195

MATRIX SPIKE

for the recovery.

These limits are left blank if the Original RESULT is more than a protocol defined factor (typically 4) times ADDED. This is a way of accounting for that when the spike is small compared to the amount in the original sample, the recovery is unreliable.

- * The recovery is underlined (out of spec) if it is outside either of these ranges.

REPORT GUIDES

Page 11

SUMMARY DATA SECTION

Page 45

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 07/14/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2195

SDG 7508
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG H2195

METHOD SUMMARY

The Method Summary Report has two tables. One shows up to five results measured using one method. The other has performance data for the method. There is one report for each TEST, as used on the Data Sheet Report.

The following notes apply to this report:

- * Each table is subdivided into sections, one for each preparation batch. A preparation batch is a group of aliquots prepared at roughly the same time in one work area of the lab using the same method.

There should be Lab Control Sample and Method Blank results in each preparation batch since this close correspondence makes the QC meaningful. Depending on lab policy, Duplicates need not occur in each batch since they QC sample dependencies such as matrix effects.

- * The RAW TEST column shows the test code used in the raw data to identify a particular analysis if it is different than the test code in the header of the report. This occurs in special cases due to method specific details about how the lab labels work.

The Lab Sample or Planchet ID combined with the (Raw) Test Code and Suffix uniquely identify the raw data for each analysis.

- * If a result is less than both its MDA and RDL, it is replaced by just 'U' on this report. If it is greater than or equal to the RDL but less than the MDA, the result is shown with a 'U' flag.

The J and X flags are as on the data sheet.

- * Non-U results for Method Blanks are underlined to indicate possible contamination of other samples in the preparation batch. The Method Blank Report has supporting data.
- * Lab Control Sample and Matrix Spike results are shown as: ok, No data, LOW or HIGH, with the last two underlined. 'No data'

REPORT GUIDES

Page 12

SUMMARY DATA SECTION

Page 46

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 07/14/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2195

SDG 7508
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG H2195

METHOD SUMMARY

means no amount ADDED was specified. 'LOW' and 'HIGH' correspond to when the recovery is underlined on the Lab Control Sample or Matrix Spike Report. See these reports for supporting data.

- * Duplicate sample results are shown as: ok, No data, or OUT, with the last two underlined. 'No data' means there was no original sample data found for this duplicate. 'OUT' corresponds to when the RPD is underlined on the Duplicate Report. See this report for supporting data.
 - * If the MDA column is labeled 'MAX MDA', there was more than one result measured by the reported method and the MDA shown is the largest MDA. If not all these results have the same RDL, the MAX MDA reflects only those results with RDL equal to the smallest one.
- MDAs are underlined if greater than the printed RDL.
- * Aliquots are underlined if less than the nominal value specified for the method.
 - * Preparation factors are underlined if greater than the nominal value specified for the method.
 - * Dilution factors are underlined if greater than the nominal value specified for the method.
 - * Residues are underlined if outside the range specified for the method. Residues are not printed if yields are.
 - * Yields, which may be gravimetric, radiometric or some type of recovery depending on the method, are underlined if outside the range specified for the method.
 - * Efficiencies are underlined if outside the range specified for the method. Efficiencies are detector and geometry dependent so this test is only approximate.

REPORT GUIDES

Page 13

SUMMARY DATA SECTION

Page 47

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 07/14/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2195

SDG 7508

Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford

Contract No. 630

Case no SDG H2195

METHOD SUMMARY

- * Count times are underlined if less than the nominal value specified for the method.
- * Resolutions (as FWHM; Full Width at Half Max) are underlined if greater than the method specified limit.
- * Tracer drifts are underlined if their absolute values are greater than the method specified limit. Tracer drifts are not printed if percent moistures are.
- * Days Held are underlined if greater than the holding time specified in the protocol.
- * Analysis dates are underlined if before their planchet's preparation date or, if a limit is specified, too far after it.

For some methods, ratios as percentages and error estimates for them are computed for pairs of results. A ratio column header like '1+3' means the ratio of the first result column and the third result column.

Ratios are not computed for Lab Control Sample, Method Blank or Matrix Spike results since their matrices are not necessarily similar to client samples'.

The error estimate for a ratio of results from one planchet reflects only counting errors since other errors should be correlated. For a ratio involving different planchets, if QC limits are computed based on total errors, the error for the ratio allows for the preparation errors for the planchets.

The ratio is underlined (out of spec) if the absolute value of its difference from the nominal value is greater than its error estimate. If no nominal value is specified, this test is not done.

For Gross Alpha or Gross Beta results, there may be a column showing the sum of other Alpha or Beta emitters. This sum includes all relevant

REPORT GUIDES

Page 14

SUMMARY DATA SECTION

Page 48

Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-RG

Version 3.06

Report date 07/14/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2195

SDG 7508
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG H2195

METHOD SUMMARY

results in the DVD database, whether reported or not. Results in the sum are weighted by a particles/decay value specified by the lab for each relevant analyte. Results less than their MDA are not included. No sums are computed for Lab Control, Method Blank or Matrix Spike samples since their various planchets may not be physically related.

If a ratio of total isotopic to Gross Alpha or Beta is shown, the error for the ratio reflects both the error in the Gross result and the sum, as square root of sum of squares, of the errors in the isotopic results.

For total elemental uranium or thorium results, there may be a column showing the total weight computed from associated isotopic results. Ignoring results less than their MDAs, this is a weighted sum of the isotopic results. The weights depend on the molecular weight and half-life of each isotope so as to convert activities (decays) to weight (atoms).

If a ratio of total computed to measured elemental uranium or thorium is shown, the error for the ratio reflects the errors in all the measurements.

REPORT GUIDES

Page 15

SUMMARY DATA SECTION

Page 49

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 07/14/03

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-67		Page 1 of 1		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (72.5°-75°)		SDG H2195C 7508		SAF No. F03-006		Air Quality <input type="checkbox"/>			
Ice Chest No. ERC 99-010		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To EBERLINE SERVICES (Formerly TMA)		Offsite Property No. R030 249				Bill of Lading/Air Bill No. SEE OSR					
POSSIBLE SAMPLE HAZARDS/REMARKS Radioactive Tie To B16W80 Special Handling and/or Storage None				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container	aG	aG	aG	aG	aG		
				No. of Container(s)	1	1	1	1	1		
				Volume	120mL	60mL	120mL	60mL	60mL		
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions.	Tritium - H3			
Sample No.	Matrix *	Sample Date	Sample Time								
B16W84	SOIL	4-30-03	0900				X	X		Tie To: B16W80	
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *			
Relinquished By/Removed From M. Johnson 4-30-03		Date/Time 4-30-03		Received By/Stored In R. F. Hilborn 4-30-03		Date/Time 4-30-03		<p>** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. 95%</p> <p>(1) Technetium-99; Strontium-89,90 - Total Sr, Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237</p>			
Relinquished By/Removed From R. F. Hilborn 4-30-03		Date/Time 4-30-03		Received By/Stored In 1-B 3728 4-30-03		Date/Time 4-30-03					
Relinquished By/Removed From 1-B 3728 4-30-03		Date/Time 4-30-03		Received By/Stored In R. F. Hilborn 5-2-03		Date/Time 5-2-03					
Relinquished By/Removed From R. F. Hilborn 5-2-03		Date/Time 5-2-03		Received By/Stored In Fed Ex		Date/Time					
Relinquished By/Removed From Fed Ex		Date/Time		Received By/Stored In Trent		Date/Time 5-5-03 (100)					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
LABORATORY SECTION		Received By		Title		Date/Time					
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time					

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-68		Page 1 of 1		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (97.5'-100')			SDG H2195C 7508			SAF No. F03-006		Air Quality <input type="checkbox"/>	
Ice Chest No. FRC 99.010		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To EBERLINE SERVICES (Formerly TMA)		Offsite Property No. A030 249				Bill of Lading/Air Bill No. SEE O5PC					
POSSIBLE SAMPLE HAZARDS/REMARKS Radioactive T.O. To B16 WDI Special Handling and/or Storage None				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container	aG	aG	aG	aG	aG		
				No. of Container(s)	1	1	1	1	1		
				Volume	120mL	60mL	120mL	60mL	60mL		
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 553.2	Oil & Grease - 413.1	See item (1) in Special Instructions.	Tritium - H3			
				TILTD:							
Sample No.	Matrix *	Sample Date	Sample Time								
B16W85	SOIL	4-30-03	1238								
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS			
Relinquished By/Removed From M. Hansen		Date/Time 4-30-03 1430		Received By/Stored In R. F. Hulstrom		Date/Time 4-30-03 1430		<p>** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.</p> <p>(1) Technetium-99; Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237</p> <p>4/22/03</p>			
Relinquished By/Removed From R. F. Hulstrom		Date/Time 4-30-03 1430		Received By/Stored In R. F. Hulstrom		Date/Time 4-30-03 1430					
Relinquished By/Removed From R. F. Hulstrom		Date/Time 5-2-03 1000		Received By/Stored In R. F. Hulstrom		Date/Time 5-2-03 1000					
Relinquished By/Removed From R. F. Hulstrom		Date/Time 5-2-03 1000		Received By/Stored In R. F. Hulstrom		Date/Time 5-2-03 1000					
Relinquished By/Removed From F. E. D. ex		Date/Time 5-5-03 1000		Received By/Stored In F. E. D. ex		Date/Time 5-5-03 1000					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
LABORATORY SECTION		Received By				Title				Date/Time	
FINAL SAMPLE DISPOSITION		Disposal Method				Disposed By				Date/Time	

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-69		Page 1 of 1				
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days			
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (147.5'-150') H2195 (7508)				SAF No. F03-006		Air Quality <input type="checkbox"/>					
Ice Chest No. ERC01-019		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express							
Shipped To EBERLINE SERVICES (Formerly TMA)		Offsite Property No. P030250				Bill of Lading/Air Bill No. SEE OSPA							
POSSIBLE SAMPLE HAZARDS/REMARKS <i>Radiocesium</i> Tie To B16W86 Special Handling and/or Storage <i>5-6-03</i> <i>100/400</i> <i>No wa</i>				Preservation		Cool 4C	Cool 4C	Cool 4C	None	None			
				Type of Container		aG	aG	aG	aG	aG			
				No. of Container(s)		1	1	1	1	1			
				Volume		120mL	60mL	120mL	60mL	60mL			
				SAMPLE ANALYSIS		Chromium Hex - 7196	NO2/MO3 - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions.	Tritium - H3			
Sample No.	Matrix *	Sample Date	Sample Time										
B16W86	SOIL	5/5/3	0900					X	X		<i>Tie To:</i> <i>B16W86</i>		
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS					
Relinquished By/Removed From <i>PH</i> Date/Time <i>5/5/03 1315</i>		Received By/Stored In <i>REF 1A</i> Date/Time <i>5503 1315</i>		** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis: <i>98 4/22/03</i> (1) Technetium-99; Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 Personnel not available to relinquish samples from the 3728 Ref # <i>1A</i> on <i>5/6/03</i>									
Relinquished By/Removed From <i>1A</i> Date/Time <i>3728 5-6-03 1000</i>		Received By/Stored In <i>R. Feldman</i> Date/Time <i>5-6-03 1000</i>											
Relinquished By/Removed From <i>ERC</i> Date/Time <i>1000</i>		Received By/Stored In <i>Fed Ex</i> Date/Time											
Relinquished By/Removed From <i>FED EX</i> Date/Time		Received By/Stored In <i>Lur</i> Date/Time <i>5-8-03 1100</i>											
Relinquished By/Removed From Date/Time		Received By/Stored In Date/Time											
Relinquished By/Removed From Date/Time		Received By/Stored In Date/Time											
Relinquished By/Removed From Date/Time		Received By/Stored In Date/Time											
LABORATORY SECTION		Received By		Title				Date/Time					
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time					

FH-Central Plateau Project						CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST								F03-006-70		Page 1 of 1					
Collector Johansen/Pope/Pfister						Company Contact LC Hulstrom				Telephone No. 373-3928				Project Coordinator TRENT, SJ				Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling						Sampling Location 216-A-37 (C4106); (197.5'-200') H2195 (7508)				SAF No. F03-006				Air Quality <input type="checkbox"/>							
Ice Chest No. FRC 01-021						Field Logbook No. HNF-N-3361				COA 117504ES10				Method of Shipment Federal Express							
Shipped To EBERLINE SERVICES (Formerly TMA)						Offsite Property No. A030 252				Bill of Lading/Air Bill No. SEE OSLR											
POSSIBLE SAMPLE HAZARDS/REMARKS Radiative Tie TO B16WD0 Special Handling and/or Storage No way						Preservation	Cool 4C	Cool 4C	Cool 4C	None	None										
						Type of Container	aG	aG	aG	aG	aG										
						No. of Container(s)	1	1	1	1	1										
						Volume	120mL	60mL	120mL	60mL	60mL										
SAMPLE ANALYSIS						Chromium Hex - 7196	NO ₂ /NO ₃ - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions.	Tritium - H3											
Sample No.	Matrix *	Sample Date	Sample Time																		
B16W87	SOIL	5/6/03	0945				X	Y													
CHAIN OF POSSESSION						Sign/Print Names						SPECIAL INSTRUCTIONS						Matrix *			
Relinquished By/Removed From M. Johansen				Date/Time 5/6/03 1100		Received By/Stored In REF IA 3728				Date/Time 5/6/03 1100		** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. **The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. 99c 4/22/03 (1) Technetium-99; Strontium-89,90 – Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 Personnel not available to relinquish samples from the 3728 Ref # 1A on 5/7/03 FED ex						S=Soil SE=Sediment SO=Solid SI=Sludge W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquid T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other			
Relinquished By/Removed From IA 3728				Date/Time 5-7-03 1000		Received By/Stored In K. Kelly				Date/Time 5-7-03 1000											
Relinquished By/Removed From K. Kelly				Date/Time 5-7-03 1000		Received By/Stored In FedEx				Date/Time											
Relinquished By/Removed From FED ex				Date/Time		Received By/Stored In J. TA				Date/Time 5-8-03 1000											
Relinquished By/Removed From				Date/Time		Received By/Stored In				Date/Time											
Relinquished By/Removed From				Date/Time		Received By/Stored In				Date/Time											
LABORATORY SECTION				Received By						Title						Date/Time					
FINAL SAMPLE DISPOSITION				Disposal Method						Disposed By						Date/Time					

FH-Central Plateau Project				CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-006-71		Page 1 of 1	
Collector Johansen/Pope/Pfister				Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling				Sampling Location 216-A-37 (C4106); (237.5'-240')		H2195 (7508)		SAF No. F03-006		Air Quality <input type="checkbox"/>	
Ice Chest No. SML-600				Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express			
Shipped To EBERLINE SERVICES (Formerly TMA)				Offsite Property No. A030254		Bill of Lading/Air Bill No.					
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage				Preservation	Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container	aG	aG	aG	aG	aG		
				No. of Container(s)	1	1	1	1	1		
				Volume	120mL	60mL	120mL	60mL	60mL		
SAMPLE ANALYSIS				Chromium Hex - 7196	NO ₂ /NO ₃ - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions.	Tritium - H3			
				FIELD:							
Sample No.	Matrix *	Sample Date	Sample Time								
B16W88	SOIL	5-7-03	1050				X	X			
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. 14 4/22/03 (1) Technetium-99; Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 Personnel not available to relinquish samples from the 3728 Ref # 1B on 5/8/03			
M. J. JOHNSON		5/7/03		S. JOHNSON		5/7/03 1440					
S. JOHNSON		5/7/03 1440		REF 1B 3728		5/7/03 1440					
3728 Ref 1B		5/8/03 0830		FED EX		5/8/03 0830					
FED EX		5/8/03 0830		FED EX		5/8/03 1100					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Matrix * S=Soil SE=Sediment SO=Solid SI=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Trash WI=Wipe L=Liquid V=Vegetation X=Other			
FED EX		5/8/03 0830		FED EX		5/8/03 1100					
FED EX		5/8/03 0830		FED EX		5/8/03 1100					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
FED EX		5/8/03 0830		FED EX		5/8/03 1100					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
FED EX		5/8/03 0830		FED EX		5/8/03 1100					
LABORATORY SECTION		Received By		Title		Date/Time					
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time					

**ANALYTICAL SERVICES GROUP**

Richmond, CA Laboratory

SAMPLE RECEIPT CHECKLIST

Client: FLR Date/Time received 1000 5-5-03

CoC No. FC3-006-67,68

Container I.D. No. ERC-98-010 Requested TAT (Days) 45 P.O. Received Yes [] No []

INSPECTION

1. Custody seals on shipping container intact? Yes [☒] No [] N/A []
2. Custody seals on shipping container dated & signed? Yes [☒] No [] N/A []
3. Custody seals on sample containers intact? Yes [☒] No [] N/A []
4. Custody seals on sample containers dated & signed? Yes [☒] No [] N/A []
5. Packing material is: Wet [] Dry [☒]
6. Number of samples in shipping container: 2
7. Number of containers per sample: 2 (Or see CoC _____)
8. Paperwork agrees with samples? Yes [☒] No []
9. Samples have: Tape [] Hazard labels [] Rad labels [☒] Appropriate sample labels [☒]
10. Samples are: In good condition [☒] Leaking [] Broken Container [] Missing []
11. Samples are: Preserved [] Not preserved [☒] Preservative _____
12. Describe any anomalies: _____

13. Was P.M. notified of any anomalies? Yes [] No [] Date _____

14. Received by [Signature] Date: 5-5-03 Time: 1000

Customer Sample No.	cpm	mR/hr	wipe	Customer Sample No.	cpm	mR/hr	wipe
<u>B16W84</u>	<u>240</u>	<u>.015</u>					
<u>B16W85</u>	<u>240</u>	<u>.018</u>					

Ion Chamber Ser. No. 4011Calibration date 3-20-03

Alpha Meter Ser. No. _____

Calibration date _____

Beta/Gamma Meter Ser. No. 99574Calibration date 12-12-03

**ANALYTICAL SERVICES GROUP**

Richmond, CA Laboratory

SAMPLE RECEIPT CHECKLIST

Client: FLR Date/Time received 1100 5-8-03

CoC No. F03-006-69

Container I.D. No. ARR-01-019 Requested TAT (Days) 45 P.O. Received Yes ☐ No ☐

INSPECTION

1. Custody seals on shipping container intact? Yes ☒ No ☐ N/A ☒
2. Custody seals on shipping container dated & signed? Yes ☒ No ☐ N/A ☒
3. Custody seals on sample containers intact? Yes ☒ No ☐ N/A ☒
4. Custody seals on sample containers dated & signed? Yes ☒ No ☐ N/A ☒
5. Packing material is: Wet ☐ Dry ☒
6. Number of samples in shipping container: 2
7. Number of containers per sample: 2 (Or see CoC)
8. Paperwork agrees with samples? Yes ☒ No ☐
9. Samples have: Tape ☐ Hazard labels ☐ Rad labels ☒ Appropriate sample labels ☒
10. Samples are: In good condition ☒ Leaking ☐ Broken Container ☐ Missing ☐
11. Samples are: Preserved ☐ Not preserved ☒ Preservative
12. Describe any anomalies:
13. Was P.M. notified of any anomalies? Yes ☐ No ☐ Date
14. Received by [Signature] Date: 5-8-03 Time: 1100

Customer Sample No.	cpm	mR/hr	wipe	Customer Sample No.	cpm	mR/hr	wipe
<u>B16 W8</u>	<u>240</u>						

Ion Chamber Ser. No. Calibration date Alpha Meter Ser. No. Calibration date Beta/Gamma Meter Ser. No. 99574Calibration date 12-12-02

**ANALYTICAL SERVICES GROUP**

Richmond, CA Laboratory

SAMPLE RECEIPT CHECKLIST

Client: FLR Date/Time received 1100 5-8-03

CoC No. F03-006-70

Container I.D. No. C-RC-01-021 Requested TAT (Days) 45 P.O. Received Yes [] No []

INSPECTION

1. Custody seals on shipping container intact? Yes [✓] No [] N/A []

2. Custody seals on shipping container dated & signed? Yes [✓] No [] N/A []

3. Custody seals on sample containers intact? Yes [✓] No [] N/A []

4. Custody seals on sample containers dated & signed? Yes [✓] No [] N/A []

5. Packing material is: Wet [] Dry [✓]

6. Number of samples in shipping container: 1

7. Number of containers per sample: 2 (Or see CoC)

8. Paperwork agrees with samples? Yes [✓] No []

9. Samples have: Tape [] Hazard labels [] Rad labels [✓] Appropriate sample labels [✓]

10. Samples are: In good condition [✓] Leaking [] Broken Container [] Missing []

11. Samples are: Preserved [] Not preserved [✓] Preservative

12. Describe any anomalies:

13. Was P.M. notified of any anomalies? Yes [] No [] Date

14. Received by Lia Date: 5-8-03 Time: 1100

Customer Sample No.	cpm	mR/hr	wipe	Customer Sample No.	cpm	mR/hr	wipe
<u>B16W87</u>	<u>240</u>						

Ion Chamber Ser. No. Calibration date Alpha Meter Ser. No. Calibration date Beta/Gamma Meter Ser. No. 99574Calibration date 12-12-03

**ANALYTICAL SERVICES GROUP**

Richmond, CA Laboratory

SAMPLE RECEIPT CHECKLIST

Client: FLR Date/Time received 1100 5-9-03

CoC No. F03-006-71

Container I.D. No. SML-600 Requested TAT (Days) 45 P.O. Received Yes [] No []

INSPECTION

1. Custody seals on shipping container intact? Yes [☒] No [] N/A []

2. Custody seals on shipping container dated & signed? Yes [☒] No [] N/A []

3. Custody seals on sample containers intact? Yes [☒] No [] N/A []

4. Custody seals on sample containers dated & signed? Yes [☒] No [] N/A []

5. Packing material is: Wet [] Dry [☒]

6. Number of samples in shipping container: 2

7. Number of containers per sample: 2 (Or see CoC _____)

8. Paperwork agrees with samples? Yes [☒] No []

9. Samples have: Tape [] Hazard labels [] Red labels [☒] Appropriate sample labels [☒]

10. Samples are: In good condition [☒] Leaking [] Broken Container [] Missing []

11. Samples are: Preserved [] Not preserved [☒] Preservative _____

12. Describe any anomalies: _____

13. Was P.M. notified of any anomalies? Yes [] No [] Date _____

14. Received by [Signature] Date: 5-9-03 Time: 1100

Customer Sample No.	cpm	mR/hr	wipe	Customer Sample No.	cpm	mR/hr	wipe
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

Ion Chamber Ser. No. _____

Calibration date _____

Alpha Meter Ser. No. _____

Calibration date _____

Beta/Gamma Meter Ser. No. 99574Calibration date 12-12-03



EBERLINE

SERVICES

June 25, 2003

Mr. Steve Trent
Fluor Hanford Inc.
825 Jadwin Avenue
Richland, WA 99352

Reference: P.O. #630
Eberline Services R3-05-021-7508, SDG H2195



Dear Mr. Trent:

Enclosed is the data report for five solid samples designated under SAF No. F03-006 received at Eberline Services on May 5, 8, and 9, 2003. The samples were analyzed according to the accompanying chain-of-custody documents.

Please call if you have any questions concerning this report.

Sincerely,

Melissa C. Mannion
Program Manager

MCM

Enclosure: Data Package

Analytical Services
2030 Wright Avenue
P.O. Box 4040
Richmond, California 94804-0040
(510) 235-2633 Fax (510) 235-0438
Toll Free (800) 841-5487
www.eberlineservices.com

1.0 GENERAL

Fluor Hanford Inc. (FH) Sample Delivery Group H2195 was composed of five solid (soil) samples designated under SAF No. F03-006 with a Project Designations of: 200-PW-2/200-PW-4 OU – Borehole Soil Sampling.

The samples were received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist.

2.0 ANALYSIS NOTES

2.1 Tritium Analyses

No problems were encountered during the course of the analyses.

2.2 Carbon-14 Analyses

No problems were encountered during the course of the analyses.

2.3 Nickel-63 Analyses

No problems were encountered during the course of the analyses.

2.4 Total Strontium Analyses

No problems were encountered during the course of the analyses.

2.5 Technetium-99 Analyses

No problems were encountered during the course of the analyses.

2.6 Iodine-129 Analyses

No problems were encountered during the course of the analyses.

2.7 Isotopic Thorium Analyses

There was Th-228 and Th-230 activity in the method blank. The Th-230 (1.05 pCi/g) activity was slightly above the RDL (1.0 pCi/g) and the Th-228 (0.672 pCi/g) activity was below the RDL (1.0 pCi/g) for thorium. The method blank is currently being recounted. There is Th activity in the client samples. No other problems were encountered during the course of the analyses.

2.8 Neptunium-237 Analyses

No problems were encountered during the course of the analyses.

Case Narrative Certification Statement

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data obtained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

Melissa Mannion
Melissa C. Mannion
Program Manager

6/25/13
Date

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H2195

SDG 7508
Contact Melissa C. Mannion

Client Hanford
Contract No. 630
Case no SDG_H2195

S U M M A R Y D A T A S E C T I O N

T A B L E O F C O N T E N T S				
About this section	.	.	.	1
Sample Summaries	.	.	.	3
Prep Batch Summary	.	.	.	5
Work Summary	.	.	.	6
Method Blanks	.	.	.	9
Lab Control Samples	.	.	.	10
Duplicates	.	.	.	11
Matrix Spikes	.	.	.	12
Data Sheets	.	.	.	13
Method Summaries	.	.	.	18
Report Guides	.	.	.	32
End of Section	.	.	.	46

Melissa Mannion
Prepared by

Melissa Mannion
Reviewed by

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-TOC
Version 3.06
Report date 06/25/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2195

SDG 7508
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG H2195

ABOUT THE DATA SUMMARY SECTION

The Data Summary Section of a Data Package has all data, in several useful orders, necessary for first level, routine review of the data package for a Sample Delivery Group (SDG). This section follows the Data Package Narrative, which has an overview of the data package and a discussion of special problems. It is followed by the Raw Data Section, which has full details.

The Data Summary Section has several groups of reports:

SAMPLE SUMMARIES

The Sample and QC Summary Reports show all samples, including QC samples, reported in one SDG. These reports cross-reference client and lab sample identifiers.

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches (lab groupings reflecting how work was organized) relevant to the reported SDG with information necessary to check the completeness and consistency of the SDG.

WORK SUMMARY

The Work Summary Report shows all samples and work done on them relevant to the reported SDG.

METHOD BLANKS

The Method Blank Reports, one for each Method Blank relevant to the SDG, show all results and primary supporting information for the blanks.

LAB CONTROL SAMPLES

The Lab Control Sample Reports, one for each Lab Control Sample relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

REPORT GUIDES

Page 1

SUMMARY DATA SECTION

Page 1

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 06/25/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2195

SDG 7508
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG_H2195

ABOUT THE DATA SUMMARY SECTION

DUPLICATES

The Duplicate Reports, one for each Duplicate and Original sample pair relevant to the SDG, show all results, differences and primary supporting information for these QC samples.

MATRIX SPIKES

The Matrix Spike Reports, one for each Spiked and Original sample pair relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

DATA SHEETS

The Data Sheet Reports, one for each client sample in the SDG, show all results and primary supporting information for these samples.

METHOD SUMMARIES

The Method Summary Reports, one for each test used in the SDG, show all results, QC and method performance data for one analyte on one or two pages. (A test is a short code for the method used to do certain work to the client's specification.)

REPORT GUIDES

The Report Guides, one for each of the above groups of reports, have documentation on how to read the associated reports.

REPORT GUIDES

Page 2

SUMMARY DATA SECTION

Page 2

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 06/25/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2195

SDG 7508

Contact Melissa C. Mannion

LAB SAMPLE SUMMARY

Client Hanford

Contract No. 630

Case no SDG H2195

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
R305021-01	B16W84	216-A-37 (C4106)	SOLID		F03-006	F03-006-67	04/30/03 09:00
R305021-02	B16W85	216-A-37 (C4106)	SOLID		F03-006	F03-006-68	04/30/03 12:38
R305021-03	B16W86	216-A-37 (C4106)	SOLID		F03-006	F03-006-69	05/05/03 09:00
R305021-04	B16W87	216-A-37 (C4106)	SOLID		F03-006	F03-006-70	05/06/03 09:45
R305021-05	B16W88	216-A-37 (C4106)	SOLID		F03-006	F03-006-71	05/07/03 10:50
R305021-06	Lab Control Sample		SOLID		F03-006		
R305021-07	Method Blank		SOLID		F03-006		
R305021-08	Duplicate (R305021-04)	216-A-37 (C4106)	SOLID		F03-006		05/06/03 09:45
R305021-09	Spike (R305021-04)	216-A-37 (C4106)	SOLID		F03-006		05/06/03 09:45

LAB SUMMARY

Page 1

SUMMARY DATA SECTION

Page 3

Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-LS

Version 3.06

Report date 06/25/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2195

QC SUMMARY

SDG 7508

Contact Melissa C. Mannion

Client Hanford

Contract No. 630

Case no SDG H2195

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	LAB COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
7508	F03-006-67	B16W84	SOLID	91.0	132.3 g		05/05/03	5	R305021-01	7508-001
	F03-006-68	B16W85	SOLID	90.5	142.8 g		05/05/03	5	R305021-02	7508-002
	F03-006-69	B16W86	SOLID	97.0	150.6 g		05/08/03	3	R305021-03	7508-003
	F03-006-70	B16W87	SOLID	97.6	178.8 g		05/08/03	2	R305021-04	7508-004
	F03-006-71	B16W88	SOLID	98.3	191.3 g		05/09/03	2	R305021-05	7508-005
		Method Blank	SOLID						R305021-07	7508-007
		Lab Control Sample	SOLID						R305021-06	7508-006
		Duplicate (R305021-04)	SOLID	97.6	178.8 g		05/08/03	2	R305021-08	7508-008
		Spike (R305021-04)	SOLID	97.6	178.8 g		05/08/03	2	R305021-09	7508-009

QC SUMMARY

Page 1

SUMMARY DATA SECTION

Page 4

Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-QS

Version 3.06

Report date 06/25/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2195

SDG 7508

Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford

Contract No. 630

Case no SDG H2195

TEST	MATRIX	METHOD	PREPARATION ERROR				PLANCHETS ANALYZED			QUALI-	
			BATCH	2σ %	CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG
Alpha Spectroscopy											
NP	SOLID	Neptunium in Soil	7060-157	5.0	5			1	1	1/1	
TH	SOLID	Thorium, Isotopic in Soil	7060-157	5.0	5			1	1	1/1	
Beta Counting											
SR	SOLID	Total Strontium in Soil	7060-157	10.0	5			1	1	1/1	
TC	SOLID	Technetium 99 in Soil	7060-157	10.0	5			1	1	1/1	
Gamma Spectroscopy											
I	SOLID	Iodine 129 in Soil	7060-157	10.0	5			1	1	1/1	
Liquid Scintillation Counting											
C	SOLID	Carbon 14 in Soil	7060-157	10.0	5			1	1	1/1	
H	SOLID	Tritium in Soil	7060-157	10.0	5			1	1	1/1	1/1 X
NI_L	SOLID	Nickel 63 in Soil	7060-157	10.0	5			1	1	1/1	

Duplicates and Matrix Spikes are those with original (Client) sample in this Sample Delivery Group.

Blank and LCS planchets are those in the same preparation batch as some Client, Duplicate or Spike sample.

PREP BATCH SUMMARY

Page 1

SUMMARY DATA SECTION

Page 5

Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-PBS

Version 3.06

Report date 06/25/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2195

SDG 7508

Contact Melissa C. Mannion

LAB WORK SUMMARY

Client Hanford

Contract No. 630

Case no SDG H2195

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF- FIX	ANALYZED	REVIEWED	BY	METHOD
R305021-01	B16W84			7508-001	C		06/13/03	06/24/03	MCM	Carbon 14 in Soil
04/30/03	216-A-37 (C4106)		SOLID	7508-001	H		06/14/03	06/24/03	MCM	Tritium in Soil
05/05/03	F03-006-67	F03-006		7508-001	I		06/13/03	06/24/03	MCM	Iodine 129 in Soil
				7508-001	NI_L		06/06/03	06/24/03	MCM	Nickel 63 in Soil
				7508-001	NP		06/10/03	06/24/03	MCM	Neptunium in Soil
				7508-001	SR		06/09/03	06/24/03	MCM	Total Strontium in Soil
				7508-001	TC		06/20/03	06/24/03	MCM	Technetium 99 in Soil
				7508-001	TH		06/10/03	06/24/03	MCM	Thorium, Isotopic in Soil
R305021-02	B16W85			7508-002	C		06/13/03	06/24/03	MCM	Carbon 14 in Soil
04/30/03	216-A-37 (C4106)		SOLID	7508-002	H		06/15/03	06/24/03	MCM	Tritium in Soil
05/05/03	F03-006-68	F03-006		7508-002	I		06/14/03	06/24/03	MCM	Iodine 129 in Soil
				7508-002	NI_L		06/06/03	06/24/03	MCM	Nickel 63 in Soil
				7508-002	NP		06/10/03	06/24/03	MCM	Neptunium in Soil
				7508-002	SR		06/09/03	06/24/03	MCM	Total Strontium in Soil
				7508-002	TC		06/20/03	06/24/03	MCM	Technetium 99 in Soil
				7508-002	TH		06/10/03	06/24/03	MCM	Thorium, Isotopic in Soil
R305021-03	B16W86			7508-003	C		06/13/03	06/24/03	MCM	Carbon 14 in Soil
05/05/03	216-A-37 (C4106)		SOLID	7508-003	H		06/15/03	06/24/03	MCM	Tritium in Soil
05/08/03	F03-006-69	F03-006		7508-003	I		06/15/03	06/24/03	MCM	Iodine 129 in Soil
				7508-003	NI_L		06/06/03	06/24/03	MCM	Nickel 63 in Soil
				7508-003	NP		06/10/03	06/24/03	MCM	Neptunium in Soil
				7508-003	SR		06/09/03	06/24/03	MCM	Total Strontium in Soil
				7508-003	TC		06/20/03	06/24/03	MCM	Technetium 99 in Soil
				7508-003	TH		06/10/03	06/24/03	MCM	Thorium, Isotopic in Soil
R305021-04	B16W87			7508-004	C		06/13/03	06/24/03	MCM	Carbon 14 in Soil
05/06/03	216-A-37 (C4106)		SOLID	7508-004	H		06/15/03	06/24/03	MCM	Tritium in Soil
05/08/03	F03-006-70	F03-006		7508-004	I		06/16/03	06/24/03	MCM	Iodine 129 in Soil
				7508-004	NI_L		06/06/03	06/24/03	MCM	Nickel 63 in Soil
				7508-004	NP		06/10/03	06/24/03	MCM	Neptunium in Soil
				7508-004	SR		06/09/03	06/24/03	MCM	Total Strontium in Soil
				7508-004	TC		06/23/03	06/24/03	MCM	Technetium 99 in Soil
				7508-004	TH		06/10/03	06/24/03	MCM	Thorium, Isotopic in Soil

WORK SUMMARY

Page 1

SUMMARY DATA SECTION

Page 6

Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-LWS

Version 3.06

Report date 06/25/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2195

SDG 7508
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. 630
Case no SDG H2195

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF- FIX	ANALYZED	REVIEWED	BY	METHOD
R305021-05	B16W88			7508-005	C		06/13/03	06/24/03	MCM	Carbon 14 in Soil
05/07/03	216-A-37 (C4106)		SOLID	7508-005	H		06/15/03	06/24/03	MCM	Tritium in Soil
05/09/03	F03-006-71	F03-006		7508-005	I		06/16/03	06/24/03	MCM	Iodine 129 in Soil
				7508-005	NI_L		06/07/03	06/24/03	MCM	Nickel 63 in Soil
				7508-005	NP		06/10/03	06/24/03	MCM	Neptunium in Soil
				7508-005	SR		06/09/03	06/24/03	MCM	Total Strontium in Soil
				7508-005	TC		06/22/03	06/24/03	MCM	Technetium 99 in Soil
				7508-005	TH		06/10/03	06/24/03	MCM	Thorium, Isotopic in Soil
R305021-06	Lab Control Sample			7508-006	C		06/13/03	06/24/03	MCM	Carbon 14 in Soil
			SOLID	7508-006	H		06/15/03	06/24/03	MCM	Tritium in Soil
		F03-006		7508-006	I		06/17/03	06/24/03	MCM	Iodine 129 in Soil
				7508-006	NI_L		06/07/03	06/24/03	MCM	Nickel 63 in Soil
				7508-006	NP		06/10/03	06/24/03	MCM	Neptunium in Soil
				7508-006	SR		06/09/03	06/24/03	MCM	Total Strontium in Soil
				7508-006	TC		06/20/03	06/24/03	MCM	Technetium 99 in Soil
				7508-006	TH		06/10/03	06/24/03	MCM	Thorium, Isotopic in Soil
R305021-07	Method Blank			7508-007	C		06/13/03	06/24/03	MCM	Carbon 14 in Soil
			SOLID	7508-007	H		06/15/03	06/24/03	MCM	Tritium in Soil
		F03-006		7508-007	I		06/18/03	06/24/03	MCM	Iodine 129 in Soil
				7508-007	NI_L		06/07/03	06/24/03	MCM	Nickel 63 in Soil
				7508-007	NP		06/10/03	06/24/03	MCM	Neptunium in Soil
				7508-007	SR		06/09/03	06/24/03	MCM	Total Strontium in Soil
				7508-007	TC		06/23/03	06/24/03	MCM	Technetium 99 in Soil
				7508-007	TH		06/10/03	06/24/03	MCM	Thorium, Isotopic in Soil
R305021-08	Duplicate (R305021-04)			7508-008	C		06/13/03	06/24/03	MCM	Carbon 14 in Soil
05/06/03	216-A-37 (C4106)		SOLID	7508-008	H		06/15/03	06/24/03	MCM	Tritium in Soil
05/08/03		F03-006		7508-008	I		06/19/03	06/24/03	MCM	Iodine 129 in Soil
				7508-008	NI_L		06/07/03	06/24/03	MCM	Nickel 63 in Soil
				7508-008	NP		06/10/03	06/24/03	MCM	Neptunium in Soil
				7508-008	SR		06/09/03	06/24/03	MCM	Total Strontium in Soil
				7508-008	TC		06/23/03	06/24/03	MCM	Technetium 99 in Soil
				7508-008	TH		06/10/03	06/24/03	MCM	Thorium, Isotopic in Soil
R305021-09	Spike (R305021-04)			7508-009	H		06/15/03	06/24/03	MCM	Tritium in Soil
05/06/03	216-A-37 (C4106)		SOLID							
05/08/03		F03-006								

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2195

SDG 7508

Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford

Contract No. 630

Case no SDG H2195

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP	SPIKE	TOTAL
C	F03-006	Carbon 14 in Soil	C14_COX_LSC	5			1	1	1		8
H	F03-006	Tritium in Soil	906.0_H3_LSC	5			1	1	1	1	9
I	F03-006	Iodine 129 in Soil	I129_SEP_LEPS_GS	5			1	1	1		8
NI_L	F03-006	Nickel 63 in Soil	NI63_LSC	5			1	1	1		8
NP	F03-006	Neptunium in Soil	NP237_LLE_PLATE_AEA	5			1	1	1		8
SR	F03-006	Total Strontium in Soil	SRTOT_SEP_PRECIP_GPC	5			1	1	1		8
TC	F03-006	Technetium 99 in Soil	TC99_TR_SEP_LSC	5			1	1	1		8
TH	F03-006	Thorium, Isotopic in Soil	THISO_IE_PLATE_AEA	5			1	1	1		8
TOTALS				40			8	8	8	1	65

WORK SUMMARY

Page 3

SUMMARY DATA SECTION

Page 8

Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-LWS

Version 3.06

Report date 06/25/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2195

7508-007

Method Blank

METHOD BLANK

SDG <u>7508</u>	Client/Case no <u>Hanford</u>	SDG <u>H2195</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R305021-07</u>	Client sample id <u>Method Blank</u>	
Dept sample id <u>7508-007</u>	Material/Matrix <u>SOLID</u>	
	SAF No <u>F03-006</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Tritium	10028-17-8	0.077	0.17	0.28	400	U	H
Carbon 14	14762-75-5	1.37	1.9	3.1	50	U	C
Nickel 63	13981-37-8	-0.966	1.3	2.2	30	U	NI_L
Total Strontium	SR-RAD	-0.091	0.15	0.33	1.0	U	SR
Technetium 99	14133-76-7	0.108	0.30	0.58	15	U	TC
Thorium 228	14274-82-9	<u>0.672</u>	0.39	0.37			TH
Thorium 230	14269-63-7	<u>1.05</u>	0.49	0.37	1.0		TH
Thorium 232	TH-232	0	0.096	0.37	1.0	U	TH
Neptunium 237	13994-20-2	0	0.080	0.12	1.0	U	NP
Iodine 129	15046-84-1	0.164	0.26	0.58	2.0	U	I

200-PW-2/200-PW-4 OU-Borehole Soil

QC-BLANK #44725

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>06/25/03</u>

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2195

7508-006

Lab Control Sample

LAB CONTROL SAMPLE

SDG <u>7508</u> Contact <u>Melissa C. Mannion</u> Lab sample id <u>R305021-06</u> Dept sample id <u>7508-006</u>	Client/Case no <u>Hanford</u> SDG <u>H2195</u> Contract <u>No. 630</u> Client sample id <u>Lab Control Sample</u> Material/Matrix <u>SOLID</u> SAF No <u>F03-006</u>
---	--

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Tritium	13.3	0.43	0.27	400		H	13.8	0.55	96	84-116	80-120
Carbon 14	1830	19	4.5	50		C	1980	79	92	85-115	80-120
Nickel 63	257	4.5	2.1	30		NI_L	274	11	94	84-116	80-120
Total Strontium	23.2	1.1	0.35	1.0		SR	22.1	0.88	105	82-118	80-120
Technetium 99	131	2.7	0.65	15		TC	120	4.8	109	82-118	80-120
Thorium 230	43.4	4.5	0.30	1.0	B	TH	44.8	1.8	97	82-118	80-120
Neptunium 237	18.6	1.8	0.11	1.0		NP	21.8	0.87	85	85-115	80-120
Iodine 129	138	0.92	1.0	2.0		I	127	5.1	109	83-117	80-120

200-PW-2/200-PW-4 OU-Borehole Soil

QC-LCS #44724

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2195

7508-008

B16W87

DUPLICATE

SDG <u>7508</u>		Client/Case no <u>Hanford</u>		SDG <u>H2195</u>
Contact <u>Melissa C. Mannion</u>		Contract <u>No. 630</u>		
DUPLICATE		ORIGINAL		
Lab sample id <u>R305021-08</u>	Lab sample id <u>R305021-04</u>	Client sample id <u>B16W87</u>		
Dept sample id <u>7508-008</u>	Dept sample id <u>7508-004</u>	Location/Matrix <u>216-A-37 (C4106)</u> <u>SOLID</u>		
	Received <u>05/08/03</u>	Collected/Weight <u>05/06/03 09:45</u> <u>178.8 g</u>		
% solids <u>97.6</u>	% solids <u>97.6</u>	Custody/SAF No <u>F03-006-70</u> <u>F03-006</u>		

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI- FIERS	RPD %	3σ PROT TOT LIMIT
Tritium	86.7	0.88	0.18	400		H	79.6	0.80	0.17		9	21
Carbon 14	1.00	1.8	3.0	50	U	C	0.420	1.7	2.9	U	-	
Nickel 63	-0.501	1.4	2.4	30	U	NI_L	-0.472	1.5	2.6	U	-	
Total Strontium	0.050	0.20	0.39	1.0	U	SR	0.091	0.16	0.31	U	-	
Technetium 99	0.042	0.19	0.52	15	U	TC	0.135	0.32	0.60	U	-	
Thorium 228	0.609	0.35	0.33		B	TH	0.701	0.37	0.28	B	14	117
Thorium 230	0.869	0.44	0.33	1.0	B	TH	1.33	0.46	0.35	B	42	88
Thorium 232	0.652	0.35	0.33	1.0		TH	0.442	0.22	0.28		38	114
Neptunium 237	0	0.089	0.13	1.0	U	NP	0	0.075	0.11	U	-	
Iodine 129	0.022	0.62	1.4	2.0	U	I	-0.355	0.75	1.7	U	-	

200-PW-2/200-PW-4 OU-Borehole Soil

QC-DUP#4 44726

DUPLICATES

Page 1

SUMMARY DATA SECTION

Page 11

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DUP</u>
Version <u>3.06</u>
Report date <u>06/25/03</u>

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2195

7508-009

B16W87

MATRIX SPIKE

SDG <u>7508</u>		Client/Case no <u>Hanford</u> SDG <u>H2195</u>	
Contact <u>Melissa C. Mannion</u>		Contract No. <u>630</u>	
MATRIX SPIKE		ORIGINAL	
Lab sample id <u>R305021-09</u>	Lab sample id <u>R305021-04</u>	Client sample id <u>B16W87</u>	
Dept sample id <u>7508-009</u>	Dept sample id <u>7508-004</u>	Location/Matrix <u>216-A-37 (C4106)</u> SOLID	
	Received <u>05/08/03</u>	Collected/Weight <u>05/06/03 09:45</u> <u>178.8 g</u>	
% solids <u>97.6</u>	% solids <u>97.6</u>	Custody/SAF No <u>F03-006-70</u> <u>F03-006</u>	

ANALYTE	SPIKE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	ORIGINAL pCi/g	2σ ERR (COUNT)	REC 3σ % (TOTAL)	LMTS LIMITS	PROTOCOL
Tritium	125	1.3	0.25	400	X	H	54.1	2.2	79.6	0.80	84	58-142	60-140

200-PW-2/200-PW-4 OU-Borehole Soil

QC-MS#4 44727

MATRIX SPIKES

Page 1

SUMMARY DATA SECTION

Page 12

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-MS</u>
Version <u>3.06</u>
Report date <u>06/25/03</u>

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H2195

7508-001

B16W84

DATA SHEET

SDG <u>7508</u>	Client/Case no <u>Hanford</u>	SDG <u>H2195</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R305021-01</u>	Client sample id <u>B16W84</u>	
Dept sample id <u>7508-001</u>	Location/Matrix <u>216-A-37 (C4106)</u>	<u>SOLID</u>
Received <u>05/05/03</u>	Collected/Weight <u>04/30/03 09:00</u>	<u>132.3 g</u>
% solids <u>91.0</u>	Custody/SAF No <u>F03-006-67</u>	<u>F03-006</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Tritium	10028-17-8	175	1.8	0.26	400		H
Carbon 14	14762-75-5	-0.040	1.7	2.9	50	U	C
Nickel 63	13981-37-8	-0.227	1.5	2.5	30	U	NI_L
Total Strontium	SR-RAD	0.073	0.17	0.33	1.0	U	SR
Technetium 99	14133-76-7	0.307	0.35	0.64	15	U	TC
Thorium 228	14274-82-9	0.476	0.30	0.35		B	TH
Thorium 230	14269-63-7	0.804	0.37	0.28	1.0	B	TH
Thorium 232	TH-232	0.219	0.15	0.28	1.0	U	TH
Neptunium 237	13994-20-2	0	0.066	0.099	1.0	U	NP
Iodine 129	15046-84-1	-0.084	0.56	1.3	2.0	U	I

200-PW-2/200-PW-4 OU-Borehole Soil

DATA SHEETS

Page 1

SUMMARY DATA SECTION

Page 13

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>06/25/03</u>

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H2195

7508-002

B16W85

D A T A S H E E T

SDG <u>7508</u>	Client/Case no <u>Hanford</u>	SDG <u>H2195</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R305021-02</u>	Client sample id <u>B16W85</u>	
Dept sample id <u>7508-002</u>	Location/Matrix <u>216-A-37 (C4106)</u>	<u>SOLID</u>
Received <u>05/05/03</u>	Collected/Weight <u>04/30/03 12:38</u>	<u>142.8 g</u>
% solids <u>90.5</u>	Custody/SAF No <u>F03-006-68</u>	<u>F03-006</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Tritium	10028-17-8	225	2.3	0.31	400		H
Carbon 14	14762-75-5	0.596	1.9	3.1	50	U	C
Nickel 63	13981-37-8	<u>-1.75</u>	1.4	2.4	30	U	NI_L
Total Strontium	SR-RAD	0.023	0.16	0.33	1.0	U	SR
Technetium 99	14133-76-7	0.170	0.30	0.55	15	U	TC
Thorium 228	14274-82-9	0.345	0.31	0.37		U	TH
Thorium 230	14269-63-7	0.689	0.31	0.29	1.0	B	TH
Thorium 232	TH-232	0.268	0.23	0.29	1.0	U	TH
Neptunium 237	13994-20-2	0.077	0.077	0.12	1.0	U	NP
Iodine 129	15046-84-1	-0.204	0.52	1.2	2.0	U	I

200-PW-2/200-PW-4 OU-Borehole Soil

DATA SHEETS

Page 2

SUMMARY DATA SECTION

Page 14

Lab id <u>EBRINE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>06/25/03</u>

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H2195

7508-003

B16W86

DATA SHEET

SDG <u>7508</u>	Client/Case no <u>Hanford</u>	SDG <u>H2195</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R305021-03</u>	Client sample id <u>B16W86</u>	
Dept sample id <u>7508-003</u>	Location/Matrix <u>216-A-37 (C4106)</u>	<u>SOLID</u>
Received <u>05/08/03</u>	Collected/Weight <u>05/05/03 09:00</u>	<u>150.6 g</u>
% solids <u>97.0</u>	Custody/SAF No <u>F03-006-69</u>	<u>F03-006</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Tritium	10028-17-8	83.2	0.84	0.17	400		H
Carbon 14	14762-75-5	-0.340	1.5	2.6	50	U	C
Nickel 63	13981-37-8	-1.29	1.4	2.4	30	U	NI_L
Total Strontium	SR-RAD	-0.004	0.15	0.32	1.0	U	SR
Technetium 99	14133-76-7	0.109	0.34	0.57	15	U	TC
Thorium 228	14274-82-9	0.512	0.30	0.40		B	TH
Thorium 230	14269-63-7	0.256	0.22	0.35	1.0	U	TH
Thorium 232	TH-232	0.438	0.22	0.28	1.0		TH
Neptunium 237	13994-20-2	0	0.082	0.12	1.0	U	NP
Iodine 129	15046-84-1	-0.062	0.56	1.3	2.0	U	I

200-PW-2/200-PW-4 OU-Borehole Soil

DATA SHEETS

Page 3

SUMMARY DATA SECTION

Page 15

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>06/25/03</u>

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H2195

7508-004

B16W87

DATA SHEET

SDG <u>7508</u>	Client/Case no <u>Hanford</u>	SDG <u>H2195</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R305021-04</u>	Client sample id <u>B16W87</u>	
Dept sample id <u>7508-004</u>	Location/Matrix <u>216-A-37 (C4106)</u>	<u>SOLID</u>
Received <u>05/08/03</u>	Collected/Weight <u>05/06/03 09:45</u>	<u>178.8 g</u>
% solids <u>97.6</u>	Custody/SAF No <u>F03-006-70</u>	<u>F03-006</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Tritium	10028-17-8	79.6	0.80	0.17	400		H
Carbon 14	14762-75-5	0.420	1.7	2.9	50	U	C
Nickel 63	13981-37-8	-0.472	1.5	2.6	30	U	NI_L
Total Strontium	SR-RAD	0.091	0.16	0.31	1.0	U	SR
Technetium 99	14133-76-7	0.135	0.32	0.60	15	U	TC
Thorium 228	14274-82-9	0.701	0.37	0.28		B	TH
Thorium 230	14269-63-7	1.33	0.46	0.35	1.0	B	TH
Thorium 232	TH-232	0.442	0.22	0.28	1.0		TH
Neptunium 237	13994-20-2	0	0.075	0.11	1.0	U	NP
Iodine 129	15046-84-1	-0.355	0.75	1.7	2.0	U	I

200-PW-2/200-PW-4 OU-Borehole Soil

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H2195

7508-005

B16W88

DATA SHEET

SDG <u>7508</u>	Client/Case no <u>Hanford</u>	SDG <u>H2195</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R305021-05</u>	Client sample id <u>B16W88</u>	
Dept sample id <u>7508-005</u>	Location/Matrix <u>216-A-37 (C4106)</u>	<u>SOLID</u>
Received <u>05/09/03</u>	Collected/Weight <u>05/07/03 10:50</u>	<u>191.3 g</u>
% solids <u>98.3</u>	Custody/SAF No <u>F03-006-71</u>	<u>F03-006</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Tritium	10028-17-8	44.0	0.58	0.16	400		H
Carbon 14	14762-75-5	0.543	1.6	2.6	50	U	C
Nickel 63	13981-37-8	-0.101	1.4	2.4	30	U	NI_L
Total Strontium	SR-RAD	0.119	0.18	0.35	1.0	U	SR
Technetium 99	14133-76-7	0.163	0.31	0.56	15	U	TC
Thorium 228	14274-82-9	0.577	0.39	0.37		B	TH
Thorium 230	14269-63-7	0.960	0.49	0.37	1.0	B	TH
Thorium 232	TH-232	0.672	0.39	0.37	1.0		TH
Neptunium 237	13994-20-2	0	0.069	0.10	1.0	U	NP
Iodine 129	15046-84-1	-0.510	0.80	1.8	2.0	U	I

200-PW-2/200-PW-4 OU-Borehole Soil

DATA SHEETS

Page 5

SUMMARY DATA SECTION

Page 17

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>06/25/03</u>

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2195

Test NP Matrix SOLID
SDG 7508
Contact Melissa C. Mannion

LAB METHOD SUMMARY

NEPTUNIUM IN SOIL
ALPHA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG H2195

RESULTS

LAB RAW SUF- Neptunium
SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID 237

Preparation batch 7060-157

R305021-01	7508-001	B16W84	U
R305021-02	7508-002	B16W85	U
R305021-03	7508-003	B16W86	U
R305021-04	7508-004	B16W87	U
R305021-05	7508-005	B16W88	U
R305021-06	7508-006	LCS (QC ID=44724)	ok
R305021-07	7508-007	BLK (QC ID=44725)	U
R305021-08	7508-008	Duplicate (R305021-04)	- U

Nominal values and limits from method RDLs (pCi/g) 1.0
200-PW-2/200-PW-4 OU-Borehole Soil

METHOD PERFORMANCE

LAB RAW SUF- MDA ALIQ PREP DILU- YIELD EFF COUNT FWHM DRIFT DAYS ANAL-
SAMPLE ID TEST FIX CLIENT SAMPLE ID pCi/g g FAC TION % % min keV KeV HELD PREPARED YZED DETECTOR

Preparation batch 7060-157 2σ prep error 5.0 % Reference Lab Notebook 7060 pg. 157

R305021-01	B16W84	0.099	0.500	82	102	41	06/10/03	06/10	SS-005
R305021-02	B16W85	0.12	0.500	68	102	41	06/10/03	06/10	SS-006
R305021-03	B16W86	0.12	0.500	61	103	36	06/10/03	06/10	SS-008
R305021-04	B16W87	0.11	0.500	71	102	35	06/10/03	06/10	SS-009
R305021-05	B16W88	0.10	0.500	74	103	34	06/10/03	06/10	SS-010
R305021-06	LCS (QC ID=44724)	0.11	0.500	74	103		06/10/03	06/10	SS-011
R305021-07	BLK (QC ID=44725)	0.12	0.500	70	103		06/10/03	06/10	SS-013
R305021-08	Duplicate (R305021-04)	0.13	0.500	59	104	35	06/10/03	06/10	SS-015
	(QC ID=44726)								

Nominal values and limits from method 1.0 0.500 20-105 100 180

METHOD SUMMARIES

Page 1

SUMMARY DATA SECTION

Page 18

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 06/25/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2195

Test NP Matrix SOLID
SDG 7508
Contact Melissa C. Mannion

LAB METHOD SUMMARY, cont.

NEPTUNIUM IN SOIL
ALPHA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG H2195

PROCEDURES	REFERENCE	NP237_LLE_PLATE_AEA
CP-060	Soil Preparation, rev 4	
CP-071	Soil Dissolution, > 1.0g Aliquot, rev 2	
CP-930	Neptunium from Solids and Water by Extraction Chromatography, rev 0	
CP-008	Heavy Element Electroplating, rev 7	

AVERAGES \pm 2 SD	MDA <u>0.11</u> \pm <u>0.022</u>
FOR 8 SAMPLES	YIELD <u>70</u> \pm <u>15</u>

METHOD SUMMARIES

Page 2

SUMMARY DATA SECTION

Page 19

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 06/25/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2195

Test TH Matrix SOLID
 SDG 7508
 Contact Melissa C. Mannion

LAB METHOD SUMMARY

THORIUM, ISOTOPIC IN SOIL

ALPHA SPECTROSCOPY

Client Hanford
 Contract No. 630
 Contract SDG H2195

RESULTS

LAB RAW SUF-
 SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Thorium 230

Preparation batch 7060-157

R305021-01	7508-001	B16W84	0.804
R305021-02	7508-002	B16W85	0.689
R305021-03	7508-003	B16W86	U
R305021-04	7508-004	B16W87	1.33
R305021-05	7508-005	B16W88	0.960
R305021-06	7508-006	LCS (QC ID=44724)	ok
R305021-07	7508-007	BLK (QC ID=44725)	1.05
R305021-08	7508-008	Duplicate (R305021-04)	ok

Nominal values and limits from method RDLs (pCi/g) 1.0
 200-PW-2/200-PW-4 OU-Borehole Soil

METHOD PERFORMANCE

LAB	RAW	SUF-	MAX MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS	ANAL-				
SAMPLE ID	TEST	FIX	CLIENT	SAMPLE ID	pCi/g	g	FAC	TION	%	%	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR
Preparation batch 7060-157			2σ prep error 5.0 %			Reference Lab Notebook 7060 pg. 157											
R305021-01			B16W84		0.28	0.250			92	161		41	06/10/03	06/10	SS-039		
R305021-02			B16W85		0.29	0.250			86	161		41	06/10/03	06/10	SS-040		
R305021-03			B16W86		0.35	0.250			90	161		36	06/10/03	06/10	SS-041		
R305021-04			B16W87		0.35	0.250			87	162		35	06/10/03	06/10	SS-043		
R305021-05			B16W88		0.37	0.250			64	162		34	06/10/03	06/10	SS-044		
R305021-06			LCS (QC ID=44724)		0.30	0.250			82	162			06/10/03	06/10	SS-045		
R305021-07			BLK (QC ID=44725)		0.37	0.250			68	162			06/10/03	06/10	SS-047		
R305021-08			Duplicate (R305021-04)		0.33	0.250			77	162		35	06/10/03	06/10	SS-048		
			(QC ID=44726)														

Nominal values and limits from method 1.0 0.250 20-105 150 180

METHOD SUMMARIES

Page 3

SUMMARY DATA SECTION

Page 20

Lab id EBRLNE
 Protocol Hanford
 Version Ver 1.0
 Form DVD-LMS
 Version 3.06
 Report date 06/25/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2195

Test TH Matrix SOLID
SDG 7508
Contact Melissa C. Mannion

LAB METHOD SUMMARY, cont.

THORIUM, ISOTOPIC IN SOIL
ALPHA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG H2195

PROCEDURES	REFERENCE	THISO_IE_PLATE_AEA
	CP-060	Soil Preparation, rev 4
	CP-071	Soil Dissolution, > 1.0g Aliquot, rev 2
	CP-900	Thorium in Water and Dissolved Solid Samples by Extraction Chromatography, rev 1
	CP-008	Heavy Element Electroplating, rev 7

AVERAGES \pm 2 SD	MDA	<u>0.33</u>	\pm	<u>0.072</u>
FOR 8 SAMPLES	YIELD	<u>81</u>	\pm	<u>21</u>

METHOD SUMMARIES

Page 4

SUMMARY DATA SECTION

Page 21

Lab id	<u>EBRLNE</u>
Protocol	<u>Hanford</u>
Version	<u>Ver 1.0</u>
Form	<u>DVD-LMS</u>
Version	<u>3.06</u>
Report date	<u>06/25/03</u>

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2195

Test SR Matrix SOLID
SDG 7508
Contact Melissa C. Mannion

LAB METHOD SUMMARY

TOTAL STRONTIUM IN SOIL
BETA COUNTING

Client Hanford
Contract No. 630
Contract SDG H2195

RESULTS

LAB	RAW	SUF-		Total
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Strontium
Preparation batch 7060-157				
R305021-01		7508-001	B16W84	U
R305021-02		7508-002	B16W85	U
R305021-03		7508-003	B16W86	U
R305021-04		7508-004	B16W87	U
R305021-05		7508-005	B16W88	U
R305021-06		7508-006	LCS (QC ID=44724)	ok
R305021-07		7508-007	BLK (QC ID=44725)	U
R305021-08		7508-008	Duplicate (R305021-04)	- U

Nominal values and limits from method RDLs (pCi/g) 1.0
200-PW-2/200-PW-4 OU-Borehole Soil

METHOD PERFORMANCE

LAB	RAW	SUF-		MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS		ANAL-	
SAMPLE ID	TEST	FIX	CLIENT SAMPLE ID	pCi/g	g	FAC	TION	%	%	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR
Preparation batch 7060-157			2σ prep error 10.0 %		Reference Lab Notebook		7060 pg. 157									
R305021-01			B16W84	0.33	1.00			89		100			40	06/09/03	06/09	GRB-201
R305021-02			B16W85	0.33	1.00			84		100			40	06/09/03	06/09	GRB-202
R305021-03			B16W86	0.32	1.00			84		100			35	06/09/03	06/09	GRB-203
R305021-04			B16W87	0.31	1.00			90		100			34	06/09/03	06/09	GRB-204
R305021-05			B16W88	0.35	1.00			82		100			33	06/09/03	06/09	GRB-207
R305021-06			LCS (QC ID=44724)	0.35	1.00			77		<u>72</u>				06/09/03	06/09	GRB-223
R305021-07			BLK (QC ID=44725)	0.33	1.00			77		116				06/09/03	06/09	GRB-232
R305021-08			Duplicate (R305021-04)	0.39	1.00			86		100			34	06/09/03	06/09	GRB-224
			(QC ID=44726)													

Nominal values and limits from method 1.0 1.00 30-105 100 180

METHOD SUMMARIES

Page 5

SUMMARY DATA SECTION

Page 22

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 06/25/03

EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP H2195

Test SR Matrix SOLID
SDG 7508
Contact Melissa C. Mannion

LAB METHOD SUMMARY, cont.
TOTAL STRONTIUM IN SOIL
BETA COUNTING

Client Hanford
Contract No. 630
Contract SDG H2195

PROCEDURES	REFERENCE	SRTOT_SEP_PRECIP_GPC
	CP-060	Soil Preparation, rev 4
	CP-071	Soil Dissolution, > 1.0g Aliquot, rev 2
	CP-381	Strontium in Solids, rev 1

AVERAGES \pm 2 SD	MDA	<u>0.34</u> \pm <u>0.049</u>
FOR 8 SAMPLES	YIELD	<u>84</u> \pm <u>10</u>

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2195

Test IC Matrix SOLID
SDG 7508
Contact Melissa C. Mannion

LAB METHOD SUMMARY

TECHNETIUM 99 IN SOIL
BETA COUNTING

Client Hanford
Contract No. 630
Contract SDG H2195

RESULTS

LAB	RAW	SUF-		Technetium
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	99
Preparation batch 7060-157				
R305021-01		7508-001	B16W84	U
R305021-02		7508-002	B16W85	U
R305021-03		7508-003	B16W86	U
R305021-04		7508-004	B16W87	U
R305021-05		7508-005	B16W88	U
R305021-06		7508-006	LCS (QC ID=44724)	ok
R305021-07		7508-007	BLK (QC ID=44725)	U
R305021-08		7508-008	Duplicate (R305021-04)	- U

Nominal values and limits from method RDLs (pCi/g) 15
200-PW-2/200-PW-4 OU-Borehole Soil

METHOD PERFORMANCE

LAB	RAW	SUF-		MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS		ANAL-	
SAMPLE ID	TEST	FIX	CLIENT SAMPLE ID	pCi/g	g	FAC	TION	%	%	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR
Preparation batch 7060-157 2σ prep error 10.0 % Reference Lab Notebook 7060 pg. 157																
R305021-01			B16W84	0.64	1.02			83		50			51	06/17/03	06/20	GRB-201
R305021-02			B16W85	0.55	1.03			89		50			51	06/17/03	06/20	GRB-202
R305021-03			B16W86	0.57	1.02			87		50			46	06/17/03	06/20	GRB-203
R305021-04			B16W87	0.60	1.02			84		50			48	06/17/03	06/23	GRB-217
R305021-05			B16W88	0.56	1.02			87		50			46	06/17/03	06/22	GRB-222
R305021-06			LCS (QC ID=44724)	0.65	1.00			90		50				06/17/03	06/20	GRB-208
R305021-07			BLK (QC ID=44725)	0.58	1.00			89		50				06/17/03	06/23	GRB-219
R305021-08			Duplicate (R305021-04)	0.52	1.02			92		50			48	06/17/03	06/23	GRB-220
			(QC ID=44726)													

Nominal values and limits from method 15 1.00 20-105 50 180

METHOD SUMMARIES

Page 7

SUMMARY DATA SECTION

Page 24

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 06/25/03

EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP H2195

Test TC Matrix SOLID
SDG 7508
Contact Melissa C. Mannion

LAB METHOD SUMMARY, cont.
TECHNETIUM 99 IN SOIL
BETA COUNTING

Client Hanford
Contract No. 630
Contract SDG H2195

PROCEDURES	REFERENCE	TC99_TR_SEP_LSC
	CP-071	Soil Dissolution, > 1.0g Aliquot, rev 2
	CP-021	Preparation of Tc-99m Tracer, rev 2
	CP-002	Q.C. Preparation, rev 4
	CP-003	Addition of Carriers and Tracers, rev 5
	CP-542	Technetium-99 Purification (Soil) by Extraction Chromatography, rev 2
	CP-008	Heavy Element Electroplating, rev 7

AVERAGES \pm 2 SD	MDA	<u>0.58</u>	\pm	<u>0.089</u>
FOR 8 SAMPLES	YIELD	<u>88</u>	\pm	<u>6</u>

METHOD SUMMARIES

Page 8

SUMMARY DATA SECTION

Page 25

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 06/25/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2195

Test I Matrix SOLID
SDG 7508
Contact Melissa C. Mannion

LAB METHOD SUMMARY

IODINE 129 IN SOIL
GAMMA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG H2195

RESULTS

LAB RAW SUF-
SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Iodine 129

Preparation batch 7060-157

R305021-01	7508-001	B16W84	U
R305021-02	7508-002	B16W85	U
R305021-03	7508-003	B16W86	U
R305021-04	7508-004	B16W87	U
R305021-05	7508-005	B16W88	U
R305021-06	7508-006	LCS (QC ID=44724)	ok
R305021-07	7508-007	BLK (QC ID=44725)	U
R305021-08	7508-008	Duplicate (R305021-04)	- U

Nominal values and limits from method RDLs (pCi/g) 2.0
200-PW-2/200-PW-4 OU-Borehole Soil

METHOD PERFORMANCE

LAB	RAW	SUF-	MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS	ANAL-				
SAMPLE ID	TEST	FIX	CLIENT	SAMPLE ID	pCi/g	g	FAC	TION	%	%	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR

Preparation batch 7060-157 2σ prep error 10.0 % Reference Lab Notebook 7060 pg. 157

R305021-01	B16W84	1.3	1.01	44	1349	44	06/10/03	06/13	XSPEC-004
R305021-02	B16W85	1.2	1.00	46	1446	45	06/10/03	06/14	XSPEC-004
R305021-03	B16W86	1.3	1.00	47	1006	41	06/10/03	06/15	XSPEC-004
R305021-04	B16W87	1.7	1.02	48	603	41	06/10/03	06/16	XSPEC-004
R305021-05	B16W88	1.8	1.00	38	1002	40	06/10/03	06/16	XSPEC-004
R305021-06	LCS (QC ID=44724)	1.0	1.00	86	1801		06/10/03	06/17	XSPEC-004
R305021-07	BLK (QC ID=44725)	0.58	1.00	91	859		06/10/03	06/18	XSPEC-004
R305021-08	Duplicate (R305021-04)	1.4	1.02	47	657	44	06/10/03	06/19	XSPEC-004
	(QC ID=44726)								

Nominal values and limits from method 2.0 1.00 20-105 300 180

PROCEDURES REFERENCE 1129_SEP_LEPS_GS
CP-024 Iodine-129, Sample Dissolution, rev 3
CP-530 Iodine-129 Purification, rev 0

AVERAGES ± 2 SD MDA 1.3 ± 0.77
FOR 8 SAMPLES YIELD 56 ± 41

METHOD SUMMARIES

Page 9

SUMMARY DATA SECTION

Page 26

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 06/25/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2195

Test C Matrix SOLID
SDG 7508
Contact Melissa C. Mannion

LAB METHOD SUMMARY

CARBON 14 IN SOIL

LIQUID SCINTILLATION COUNTING

Client Hanford
Contract No. 630
Contract SDG H2195

RESULTS

LAB RAW SUF-
SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Carbon 14

Preparation batch 7060-157

R305021-01	7508-001	B16W84	U
R305021-02	7508-002	B16W85	U
R305021-03	7508-003	B16W86	U
R305021-04	7508-004	B16W87	U
R305021-05	7508-005	B16W88	U
R305021-06	7508-006	LCS (QC ID=44724)	ok
R305021-07	7508-007	BLK (QC ID=44725)	U
R305021-08	7508-008	Duplicate (R305021-04)	- U

Nominal values and limits from method RDLs (pCi/g) 50

200-PW-2/200-PW-4 OU-Borehole Soil

METHOD PERFORMANCE

LAB	RAW	SUF-	MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS	ANAL-				
SAMPLE ID	TEST	FIX	CLIENT	SAMPLE ID	pCi/g	g	FAC	TION	%	%	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR

Preparation batch 7060-157 2σ prep error 10.0 % Reference Lab Notebook 7060 pg. 157

R305021-01	B16W84	2.9	0.348	100	100	44	06/12/03	06/13	LSC-006
R305021-02	B16W85	3.1	0.322	100	100	44	06/12/03	06/13	LSC-006
R305021-03	B16W86	2.6	0.378	100	100	39	06/12/03	06/13	LSC-006
R305021-04	B16W87	2.9	0.338	100	100	38	06/12/03	06/13	LSC-006
R305021-05	B16W88	2.6	0.376	100	100	37	06/12/03	06/13	LSC-006
R305021-06	LCS (QC ID=44724)	4.5	0.322	100	46		06/12/03	06/13	LSC-006
R305021-07	BLK (QC ID=44725)	3.1	0.322	100	100		06/12/03	06/13	LSC-006
R305021-08	Duplicate (R305021-04)	3.0	0.326	100	100	38	06/12/03	06/13	LSC-006
	(QC ID=44726)								

Nominal values and limits from method 50 0.322 50 180

PROCEDURES REFERENCE C14_COX_LSC
CP-251 Tritium/Carbon-14 Oxidation, rev 5

AVERAGES ± 2 SD MDA 3.1 ± 1.2
FOR 8 SAMPLES YIELD 100 ± 0

METHOD SUMMARIES

Page 10

SUMMARY DATA SECTION

Page 27

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 06/25/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2195

LAB METHOD SUMMARY

TRITIUM IN SOIL

LIQUID SCINTILLATION COUNTING

Test H Matrix SOLID
SDG 7508
Contact Melissa C. Mannion

Client Hanford
Contract No. 630
Contract SDG H2195

RESULTS

LAB	RAW	SUF-		
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Tritium
Preparation batch 7060-157				
R305021-01		7508-001	B16W84	175
R305021-02		7508-002	B16W85	225
R305021-03		7508-003	B16W86	83.2
R305021-04		7508-004	B16W87	79.6
R305021-05		7508-005	B16W88	44.0
R305021-06		7508-006	LCS (QC ID=44724)	ok
R305021-07		7508-007	BLK (QC ID=44725)	U
R305021-08		7508-008	Duplicate (R305021-04)	ok
R305021-09		7508-009	Spike (R305021-04)	ok X

Nominal values and limits from method RDLs (pCi/g) 400
200-PW-2/200-PW-4 OU-Borehole Soil

METHOD PERFORMANCE

LAB	RAW	SUF-	MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS	ANAL-
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID	pCi/g	g	FAC	TION	%	%	min	keV	KeV	HELD PREPARED	YZED DETECTOR
Preparation batch 7060-157 2σ prep error 10.0 % Reference Lab Notebook 7060 pg. 157													
R305021-01		B16W84	0.26	20.7			51		52			45 06/13/03 06/14	LSC-005
R305021-02		B16W85	0.31	21.2			50		43			46 06/13/03 06/15	LSC-005
R305021-03		B16W86	0.17	21.0			51		103			41 06/13/03 06/15	LSC-005
R305021-04		B16W87	0.17	21.5			53		106			40 06/13/03 06/15	LSC-005
R305021-05		B16W88	0.16	21.4			51		120			39 06/13/03 06/15	LSC-005
R305021-06		LCS (QC ID=44724)	0.27	20.0			33		120			06/13/03 06/15	LSC-005
R305021-07		BLK (QC ID=44725)	0.28	20.0			33		120			06/13/03 06/15	LSC-005
R305021-08		Duplicate (R305021-04)	0.18	21.3			50		104			40 06/13/03 06/15	LSC-005
		(QC ID=44726)											
R305021-09		Spike (R305021-04)	0.25	21.7			35		101			40 06/13/03 06/15	LSC-005
		(QC ID=44727)											

Nominal values and limits from method 400 20.0 25 180

METHOD SUMMARIES

Page 11

SUMMARY DATA SECTION

Page 28

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 06/25/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2195

Test H Matrix SOLID

SDG 7508

Contact Melissa C. Mannion

LAB METHOD SUMMARY, cont.

TRITIUM IN SOIL

LIQUID SCINTILLATION COUNTING

Client Hanford

Contract No. 630

Contract SDG H2195

PROCEDURES	REFERENCE	906.0_H3_LSC
	CP-216	Tritium in Solid Samples by Azeotropic Distillation, rev 6

AVERAGES \pm 2 SD	MDA	<u>0.23</u> \pm <u>0.11</u>
FOR 9 SAMPLES	YIELD	<u>45</u> \pm <u>17</u>

METHOD SUMMARIES

Page 12

SUMMARY DATA SECTION

Page 29

Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-LMS

Version 3.06

Report date 06/25/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2195

Test NI L Matrix SOLID
SDG 7508
Contact Melissa C. Mannion

LAB METHOD SUMMARY

NICKEL 63 IN SOIL

LIQUID SCINTILLATION COUNTING

Client Hanford
Contract No. 630
Contract SDG H2195

RESULTS

LAB RAW SUF-
SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Nickel 63

Preparation batch 7060-157

R305021-01	7508-001	B16W84	U
R305021-02	7508-002	B16W85	U
R305021-03	7508-003	B16W86	U
R305021-04	7508-004	B16W87	U
R305021-05	7508-005	B16W88	U
R305021-06	7508-006	LCS (QC ID=44724)	ok
R305021-07	7508-007	BLK (QC ID=44725)	U
R305021-08	7508-008	Duplicate (R305021-04)	- U

Nominal values and limits from method RDLs (pCi/g) 30
200-PW-2/200-PW-4 OU-Borehole Soil

METHOD PERFORMANCE

LAB	RAW	SUF-	MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS	ANAL-		
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID	pCi/g	g	FAC	TION	%	%	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR
Preparation batch 7060-157 2σ prep error 10.0 % Reference Lab Notebook 7060 pg. 157															
R305021-01		B16W84	2.5	0.500			86		100			37	06/06/03	06/06	LSC-006
R305021-02		B16W85	2.4	0.500			88		100			37	06/06/03	06/06	LSC-006
R305021-03		B16W86	2.4	0.500			90		100			32	06/06/03	06/06	LSC-006
R305021-04		B16W87	2.6	0.500			83		100			31	06/06/03	06/06	LSC-006
R305021-05		B16W88	2.4	0.500			86		100			31	06/06/03	06/07	LSC-006
R305021-06		LCS (QC ID=44724)	2.1	0.500			97		100				06/06/03	06/07	LSC-006
R305021-07		BLK (QC ID=44725)	2.2	0.500			97		100				06/06/03	06/07	LSC-006
R305021-08		Duplicate (R305021-04)	2.4	0.500			88		100			32	06/06/03	06/07	LSC-006
		(QC ID=44726)													

Nominal values and limits from method 30 0.500 30-105 50 180

METHOD SUMMARIES

Page 13

SUMMARY DATA SECTION

Page 30

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 06/25/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2195

Test NI L Matrix SOLID

SDG 7508

Contact Melissa C. Mannion

LAB METHOD SUMMARY, cont.

NICKEL 63 IN SOIL

LIQUID SCINTILLATION COUNTING

Client Hanford

Contract No. 630

Contract SDG H2195

PROCEDURES	REFERENCE	NI63_LSC
	CP-060	Soil Preparation, rev 4
	CP-071	Soil Dissolution, > 1.0g Aliquot, rev 2
	CP-431	Nickel-63 Purification, rev 5

AVERAGES \pm 2 SD	MDA	<u>2.4</u>	\pm	<u>0.32</u>
FOR 8 SAMPLES	YIELD	<u>89</u>	\pm	<u>10</u>

METHOD SUMMARIES

Page 14

SUMMARY DATA SECTION

Page 31

Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-LMS

Version 3.06

Report date 06/25/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2195

SDG 7508
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG H2195

SAMPLE SUMMARY

The Sample and QC Summary Reports show all samples, including QC samples, reported in one Sample Delivery Group (SDG).

The Sample Summary Report fully identifies client samples and gives the corresponding lab sample identification. The QC Summary Report shows at the sample level how the lab organized the samples into batches and generated QC samples. The Preparation Batch and Method Summary Reports show this at the analysis level.

The following notes apply to these reports:

- * LAB SAMPLE ID is the lab's primary identification for a sample.
- * DEPARTMENT SAMPLE ID is an alternate lab id, for example one assigned by a radiochemistry department in a lab.
- * CLIENT SAMPLE ID is the client's primary identification for a sample. It includes any sample preparation done by the client that is necessary to identify the sample.
- * QC BATCH is a lab assigned code that groups samples to be processed and QCed together. These samples should have similar matrices.

QC BATCH is not necessarily the same as SDG, which reflects samples received and reported together.

- * All Lab Control Samples, Method Blanks, Duplicates and Matrix Spikes are shown that QC any of the samples. Due to possible reanalyses, not all results for all these QC samples may be relevant to the SDG. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

REPORT GUIDES

Page 1

SUMMARY DATA SECTION

Page 32

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 06/25/03

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H2195

SDG 7508
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_H2195

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches in one Sample Delivery Group (SDG) with information necessary to check the completeness and consistency of the SDG.

The following notes apply to this report:

- * The preparation batches are shown in the same order as the Method Summary Reports are printed.
- * Only analyses of planchets relevant to the SDG are included.
- * Each preparation batch should have at least one Method Blank and LCS in it to validate client sample results.
- * The QUALIFIERS shown are all qualifiers other than U, J, B, L and H that occur on any analysis in the preparation batch. The Method Summary Report has these qualifiers on a per sample basis.

These qualifiers should be reviewed as follows:

- X Some data has been manually entered or modified.
Transcription errors are possible.
- P One or more results are 'preliminary'. The data is not ready for final reporting.
- 2 There were two or more results for one analyte on one planchet imported at one time. The results in DVD may not be the same as on the raw data sheets.

Other lab defined qualifiers may occur. In general, these should be addressed in the SDG narrative.

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2195

SDG 7508
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG H2195

WORK SUMMARY

The Work Summary Report shows all samples, including QC samples, and all relevant analyses in one Sample Delivery Group (SDG). This report is often useful as supporting documentation for an invoice.

The following notes apply to this report:

- * TEST is a code for the method used to measure associated analytes. Results and related information for each analyte are on the Data Sheet Report. In special cases, a test code used in the summary data section is not the same as in associated raw data. In this case, both codes are shown on the Work Summary.
- * SUFFIX is the lab's code to distinguish multiple analyses (recounts, reworks, reanalyses) of a fraction of the sample. The suffix indicates which result is being reported. An empty suffix normally identifies the first attempt to analyze the sample.
- * The LAB SAMPLE ID, TEST and SUFFIX uniquely identify all supporting data for a result. The Method Summary Report for each TEST has method performance data, such as yield, for each lab sample id and suffix and procedures used in the method.
- * PLANCHET is an alternate lab identifier for work done for one test. It, combined with the TEST and SUFFIX, may be the best link to raw data.
- * For QC samples, only analyses that directly QC some regular sample are shown. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.
- * The SAS (Special Analytical Services) Number is a client or lab assigned code that reflects special processing for samples, such as rapid turn around. Counts of tests done are lists by SAS number since it is likely to affect prices.

REPORT GUIDES

Page 3

SUMMARY DATA SECTION

Page 34

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 06/25/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2195

SDG 7508
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG H2195

DATA SHEET

The Data Sheet Report shows all results and primary supporting information for one client sample or Method Blank. This report corresponds to both the CLP Inorganics and Organics Data Sheet.

The following notes apply to this report:

- * TEST is a code for the method used to measure an analyte. If the TEST is empty, no data is available; the analyte was not analyzed for.
- * The LAB SAMPLE ID and TEST uniquely identify work within the Summary Data Section of a Data Package. The Work Summary and Method Summary Reports further identify raw data that underlies this work.

The Method Summary Report for each TEST has method performance data, such as yield, for each Lab Sample ID and a list of procedures used in the method.

- * ERRORS can be labeled TOTAL or COUNT. TOTAL implies a preparation (non-counting method) error has been added, as square root of sum of squares, to the counting error denoted by COUNT. The preparation errors, which may vary by preparation batch, are shown on the Method Summary Report.
- * A RESULT can be 'N.R.' (Not Reported). This means the lab did this work but chooses not to report it now, possibly because it was reported at another time.
- * When reporting a Method Blank, a RESULT can be 'N.A.' (Not Applicable). This means there is no reported client sample work in the same preparation batch as the Blank's result. This is likely to occur when the Method Blank is associated with reanalyses of selected work for a few samples in the SDG.

The following qualifiers are defined by the DVD system:

- U The RESULT is less than the MDA (Minimum Detectable Activity).

REPORT GUIDES

Page 4

SUMMARY DATA SECTION

Page 35

Lab id EBRINE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 06/25/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2195

SDG 7508
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG H2195

DATA SHEET

If the MDA is blank, the ERROR is used as the limit.

- J The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.
- B A Method Blank associated with this sample had a result without a U flag and, after correcting for possibly different aliquots, that result is greater than or equal to the MDA for this sample.

Normally, B is not assigned if U is. When method blank subtraction is shown on this report, B flags are assigned based on the unsubtracted values while U's are assigned based on the subtracted ones. Both flags can be assigned in this case.

For each sample result, all Method Blank results in the same preparation batch are compared. The Method Summary Report documents this and other QC relationships.

- L Some Lab Control Sample that QC's this sample had a low recovery. The lab can disable assignment of this qualifier.
- H Similar to 'L' except the recovery was high.
- P The RESULT is 'preliminary'.
- X Some data necessary to compute the RESULT, ERROR or MDA was manually entered or modified.
- 2 There were two or more results available for this analyte. The reported result may not be the same as in the raw data.

Other qualifiers are lab defined. Definitions should be in the SDG narrative.

The following values are underlined to indicate possible problems:

- * An MDA is underlined if it is bigger than its RDL.

REPORT GUIDES

Page 5

SUMMARY DATA SECTION

Page 36

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 06/25/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2195

SDG 7508
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG H2195

DATA SHEET

- * An ERROR is underlined if the 1.645 sigma counting error is bigger than both the MDA and the RESULT, implying that the MDA may not be a good estimate of the 'real' minimum detectable activity.
- * A negative RESULT is underlined if it is less than the negative of its 2 sigma counting ERROR.
- * When reporting a Method Blank, a RESULT is underlined if greater than its MDA. If the MDA is blank, the 2 sigma counting error is used in the comparison.

REPORT GUIDES

Page 6

SUMMARY DATA SECTION

Page 37

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 06/25/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2195

SDG 7508
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG H2195

LAB CONTROL SAMPLE

The Lab Control Sample Report shows all results, recoveries and primary supporting information for one Lab Control Sample.

The following notes apply to this report:

- * All fields in common with the Data Sheet Report have similar usage. Refer to its Report Guide for details.
- * An amount ADDED is the lab's value for the actual amount spiked into this sample with its ERROR an estimate of the error of this amount.

An amount added is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

- * REC (Recovery) is RESULT divided by ADDED expressed as a percent.
- * The first, computed limits for the recovery reflect:
 1. The error of RESULT, including that introduced by rounding the result prior to printing.

If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.
 2. The error of ADDED.
 3. A lab specified, per analyte bias. The bias changes the center of the computed limits.
- * The second limits are protocol defined upper and lower QC limits for the recovery.
- * The recovery is underlined if it is outside either of these ranges.

REPORT GUIDES

Page 7

SUMMARY DATA SECTION

Page 38

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 06/25/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2195

SDG 7508
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_H2195

DUPLICATE

The Duplicate Report shows all results, differences and primary supporting information for one Duplicate and associated Original sample.

The following notes apply to this report:

- * All fields in common with the Data Sheet Report have similar usage. This applies both to the Duplicate and Original sample data. Refer to the Data Sheet Report Guide for details.

If the Duplicate has data for a TEST and the lab did not do this test to the Original, the Original's RESULTS are underlined.

- * The RPD (Relative Percent Difference) is the absolute value of the difference of the RESULTS divided by their average expressed as a percent.

If both RESULTS are less than their MDAs, no RPD is computed and a '-' is printed.

For an analyte, if the lab did work for both samples but has data for only one, the MDA from the sample with data is used as the other's result in the RPD.

- * The first, computed limit is the sum, as square root of sum of squares, of the errors of the results divided by the average result as a percent, hence the relative error of the difference rather than the error of the relative difference. The errors include those introduced by rounding the RESULTS prior to printing.

If this limit is labeled TOT, it includes the preparation error in the RESULTS. If labeled CNT, it does not.

This value reported for this limit is at most 999.

- * The second limit for the RPD is the larger of:
1. A fixed percentage specified in the protocol.

REPORT GUIDES

Page 8

SUMMARY DATA SECTION

Page 39

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 06/25/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2195

SDG 7508
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG H2195

DUPLICATE

2. A protocol factor (typically 2) times the average MDA as a percent of the average result. This limit applies when the results are close to the MDAs.

- * The RPD is underlined if it is greater than either limit.
- * If specified by the lab, the second limit column is replaced by the Difference Error Ratio (DER), which is the absolute value of the difference of the results divided by the quadratic sum of their one sigma errors, the same errors as used in the first limit.

Except for differences due to rounding, the DER is the same as the RPD divided by the first RPD limit with the limit scaled to 1 sigma.

- * The DER is underlined if it is greater than the sigma factor, typically 2 or 3, shown in the header for the first RPD limit.

REPORT GUIDES

Page 9

SUMMARY DATA SECTION

Page 40

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 06/25/03

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H2195

SDG 7508
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG H2195

MATRIX SPIKE

The Matrix Spike Report shows all results, recoveries and primary supporting information for one Matrix Spike and associated Original sample.

The following notes apply to this report:

- * All fields in common with the Data Sheet Report have similar usage. This applies both to the Spiked and Original sample data. Refer to the Data Sheet Report Guide for details.

If the Spike has data for a TEST and the lab did not do this test to the Original, the Original's RESULTS are underlined.

- * An amount ADDED is the lab's value for the actual amount spiked into the Spike sample with its ERROR an estimate of the error of this amount.

An amount is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

- * REC (Recovery) is the Spike RESULT minus the Original RESULT divided by ADDED expressed as a percent.

- * The first, computed limits for the recovery reflect:

1. The errors of the two RESULTS, including those introduced by rounding them prior to printing.

If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

2. The error of ADDED.

3. A lab specified, per analyte bias. The bias changes the center of the computed limits.

- * The second limits are protocol defined upper and lower QC limits

REPORT GUIDES

Page 10

SUMMARY DATA SECTION

Page 41

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 06/25/03

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H2195

SDG 7508
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG H2195

MATRIX SPIKE

for the recovery.

These limits are left blank if the Original RESULT is more than a protocol defined factor (typically 4) times ADDED. This is a way of accounting for that when the spike is small compared to the amount in the original sample, the recovery is unreliable.

- * The recovery is underlined (out of spec) if it is outside either of these ranges.

REPORT GUIDES

Page 11

SUMMARY DATA SECTION

Page 42

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 06/25/03

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H2195

SDG 7508
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG H2195

METHOD SUMMARY

The Method Summary Report has two tables. One shows up to five results measured using one method. The other has performance data for the method. There is one report for each TEST, as used on the Data Sheet Report.

The following notes apply to this report:

- * Each table is subdivided into sections, one for each preparation batch. A preparation batch is a group of aliquots prepared at roughly the same time in one work area of the lab using the same method.

There should be Lab Control Sample and Method Blank results in each preparation batch since this close correspondence makes the QC meaningful. Depending on lab policy, Duplicates need not occur in each batch since they QC sample dependencies such as matrix effects.

- * The RAW TEST column shows the test code used in the raw data to identify a particular analysis if it is different than the test code in the header of the report. This occurs in special cases due to method specific details about how the lab labels work.

The Lab Sample or Planchet ID combined with the (Raw) Test Code and Suffix uniquely identify the raw data for each analysis.

- * If a result is less than both its MDA and RDL, it is replaced by just 'U' on this report. If it is greater than or equal to the RDL but less than the MDA, the result is shown with a 'U' flag.

The J and X flags are as on the data sheet.

- * Non-U results for Method Blanks are underlined to indicate possible contamination of other samples in the preparation batch. The Method Blank Report has supporting data.
- * Lab Control Sample and Matrix Spike results are shown as: ok, No data, LOW or HIGH, with the last two underlined. 'No data'

REPORT GUIDES

Page 12

SUMMARY DATA SECTION

Page 43

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 06/25/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2195

SDG 7508
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG H2195

METHOD SUMMARY

means no amount ADDED was specified. 'LOW' and 'HIGH' correspond to when the recovery is underlined on the Lab Control Sample or Matrix Spike Report. See these reports for supporting data.

- * Duplicate sample results are shown as: ok, No data, or OUT, with the last two underlined. 'No data' means there was no original sample data found for this duplicate. 'OUT' corresponds to when the RPD is underlined on the Duplicate Report. See this report for supporting data.
 - * If the MDA column is labeled 'MAX MDA', there was more than one result measured by the reported method and the MDA shown is the largest MDA. If not all these results have the same RDL, the MAX MDA reflects only those results with RDL equal to the smallest one.
- MDAs are underlined if greater than the printed RDL.
- * Aliquots are underlined if less than the nominal value specified for the method.
 - * Preparation factors are underlined if greater than the nominal value specified for the method.
 - * Dilution factors are underlined if greater than the nominal value specified for the method.
 - * Residues are underlined if outside the range specified for the method. Residues are not printed if yields are.
 - * Yields, which may be gravimetric, radiometric or some type of recovery depending on the method, are underlined if outside the range specified for the method.
 - * Efficiencies are underlined if outside the range specified for the method. Efficiencies are detector and geometry dependent so this test is only approximate.

REPORT GUIDES

Page 13

SUMMARY DATA SECTION

Page 44

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 06/25/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2195

SDG 7508
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG H2195

METHOD SUMMARY

- * Count times are underlined if less than the nominal value specified for the method.
- * Resolutions (as FWHM; Full Width at Half Max) are underlined if greater than the method specified limit.
- * Tracer drifts are underlined if their absolute values are greater than the method specified limit. Tracer drifts are not printed if percent moistures are.
- * Days Held are underlined if greater than the holding time specified in the protocol.
- * Analysis dates are underlined if before their planchet's preparation date or, if a limit is specified, too far after it.

For some methods, ratios as percentages and error estimates for them are computed for pairs of results. A ratio column header like '1+3' means the ratio of the first result column and the third result column.

Ratios are not computed for Lab Control Sample, Method Blank or Matrix Spike results since their matrices are not necessarily similar to client samples'.

The error estimate for a ratio of results from one planchet reflects only counting errors since other errors should be correlated. For a ratio involving different planchets, if QC limits are computed based on total errors, the error for the ratio allows for the preparation errors for the planchets.

The ratio is underlined (out of spec) if the absolute value of its difference from the nominal value is greater than its error estimate. If no nominal value is specified, this test is not done.

For Gross Alpha or Gross Beta results, there may be a column showing the sum of other Alpha or Beta emitters. This sum includes all relevant

REPORT GUIDES

Page 14

SUMMARY DATA SECTION

Page 45

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 06/25/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2195

SDG 7508
Contact Melissa C. Mannion

GUIDE , c o n t .

Client Hanford
Contract No. 630
Case no SDG H2195

METHOD SUMMARY

results in the DVD database, whether reported or not. Results in the sum are weighted by a particles/decay value specified by the lab for each relevant analyte. Results less than their MDA are not included. No sums are computed for Lab Control, Method Blank or Matrix Spike samples since their various planchets may not be physically related.

If a ratio of total isotopic to Gross Alpha or Beta is shown, the error for the ratio reflects both the error in the Gross result and the sum, as square root of sum of squares, of the errors in the isotopic results.

For total elemental uranium or thorium results, there may be a column showing the total weight computed from associated isotopic results. Ignoring results less than their MDAs, this is a weighted sum of the isotopic results. The weights depend on the molecular weight and half-life of each isotope so as to convert activities (decays) to weight (atoms).

If a ratio of total computed to measured elemental uranium or thorium is shown, the error for the ratio reflects the errors in all the measurements.

REPORT GUIDES

Page 15

SUMMARY DATA SECTION

Page 46

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 06/25/03

BHI-EE-011 (03/01/2002)

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-006-68		Page <u>1</u> of <u>1</u>				
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N Data Turnaround 45 Days				
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (97.5'-100') 506H219SC7508			SAF No. F03-006		Air Quality <input type="checkbox"/>					
Ice Chest No. ERC 99010		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express						
Shipped To EBERLINE SERVICES (Formerly TMA)		Offsite Property No. A030249			Bill of Lading/Air Bill No. SEE OSPC							
POSSIBLE SAMPLE HAZARDS/REMARKS <i>Radioactive</i> <i>Tie to B16 WDI</i> Special Handling and/or Storage <i>None</i>				Preservation		Cool 4C	Cool 4C	Cool 4C	None	None		
				Type of Container		aG	aG	aG	aG	aG		
				No. of Container(s)		1	1	1	1	1		
				Volume		120mL	60mL	120mL	60mL	60mL		
SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 453.2	Oil & Grease - 413.1	See item (1) in Special Instructions	Tritium - H3				
									TILTD:			
Sample No.	Matrix *	Sample Date	Sample Time									
B16W85	SOIL	4-30-03	1238				X	X	BLOWDI			
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix * S=Soil SE=Sediment SO=Solid SI=Sludge W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
<i>M. Johansen</i>		4-30-03 1430		<i>R. Felt</i>		4-30-03 1430						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
<i>R. Felt</i>		4-30-03 1430		<i>R. Felt</i>		4-30-03 1430						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. <i>952 4/22/03</i> (1) Technetium-99; Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237				
<i>J.B. 3728</i>		5-2-03 1000		<i>J.C. Felt</i>		5-2-03 1000						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
<i>R. Felt</i>		5-2-03 1000		<i>Felt Ex</i>								
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
<i>Felt Ex</i>				<i>Ken Co</i>		5-5-03 1000						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
LABORATORY SECTION		Received By		Title				Date/Time				
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time				

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-69		Page 1 of 1				
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days			
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (147.5'-150') H2195 (7508)				SAF No. F03-006		Air Quality <input type="checkbox"/>					
Ice Chest No. ERC01-09		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express							
Shipped To EBERLINE SERVICES (Formerly TMA)		Offsite Property No. R030250				Bill of Lading/Air Bill No. SEE OSLC							
POSSIBLE SAMPLE HAZARDS/REMARKS Radioactive Tie To BILWDE Special Handling and/or Storage COO/40C 5-603 No wa				Preservation		Cool 4C	Cool 4C	Cool 4C	None	None			
				Type of Container		aG	aG	aG	aG	aG			
				No. of Container(s)		1	1	1	1	1			
				Volume		120mL	60mL	120mL	60mL	60mL			
						Chromium Hex - 7196	NO2/NO3 - 343.2	Oil & Grease - 413.1	See item (1) in Special Instructions	Tritium - H3			
SAMPLE ANALYSIS													
Sample No.		Matrix *		Sample Date		Sample Time							
B16W86		SOIL		5/5/3		0900							
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS					
Relinquished By/Removed From PH Date/Time 5/5/03 1315				Received By/Stored In REF 1A Date/Time 5503 1315				** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis: 98 4/22/03 (1) Technetium-99; Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 Personnel not available to relinquish samples from the 3728 Ref # 1A on 5/6/03					
Relinquished By/Removed From 1A Date/Time 5-6-03 1000				Received By/Stored In R. Feld Date/Time 5-6-03 1000									
Relinquished By/Removed From ERC Date/Time 1000				Received By/Stored In Fed Ex Date/Time									
Relinquished By/Removed From FED EX Date/Time				Received By/Stored In Lin Date/Time 5-8-03 1100									
Relinquished By/Removed From Date/Time				Received By/Stored In Date/Time									
Relinquished By/Removed From Date/Time				Received By/Stored In Date/Time				Matrix * S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other					
Relinquished By/Removed From Date/Time				Received By/Stored In Date/Time									
LABORATORY SECTION		Received By		Title				Date/Time					
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time					

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-70		Page 1 of 1				
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days			
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (197.5'-200')		H2195 (7508)		SAF No. F03-006		Air Quality <input type="checkbox"/>					
Ice Chest No. FRC 01-021		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express							
Shipped To EBERLINE SERVICES (Formerly TMA)		Offsite Property No. F030 252		Bill of Lading/Air Bill No. SEE OSPA									
POSSIBLE SAMPLE HAZARDS/REMARKS <i>Radiation</i> <i>Tie To B16WDO</i> Special Handling and/or Storage <i>None</i>				Preservation		Cool 4C	Cool 4C	Cool 4C	None	None			
				Type of Container		aG	aG	aG	aG	aG			
				No. of Container(s)		1	1	1	1	1			
				Volume		120mL	60mL	120mL	60mL	60mL			
						Chromium Hex - 7196	NO2/NO3 - 53.2	Oil & Grease - 413.1	See item (1) in Special Instructions	Tritium - H3			
SAMPLE ANALYSIS				<i>Tie To:</i>									
Sample No.	Matrix *	Sample Date	Sample Time										
B16W87	SOIL	5/6/03	0945					X	X		B16WDO		
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS ** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis. <i>996 4/22/03</i> (1) Technetium-99; Strontium-89,90 - Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 Personnel not available to relinquish samples from the 3728 Ref # <u>18</u> on <u>5/17/03</u>					
Relinquished By/Removed From <i>FA</i> Date/Time <i>5/6/03 1100</i>		Received By/Stored In <i>REF 1A 3728</i> Date/Time <i>5/6/03 1100</i>											
Relinquished By/Removed From <i>1A 3728</i> Date/Time <i>5-7-03 1000</i>		Received By/Stored In <i>Ref 1A 3728</i> Date/Time <i>5-7-03</i>											
Relinquished By/Removed From <i>FA</i> Date/Time <i>1000</i>		Received By/Stored In <i>FedEx</i> Date/Time											
Relinquished By/Removed From <i>FedEx</i> Date/Time		Received By/Stored In <i>Ref 1A</i> Date/Time <i>5-8-03 1100</i>											
Relinquished By/Removed From Date/Time		Received By/Stored In Date/Time											
Relinquished By/Removed From Date/Time		Received By/Stored In Date/Time											
LABORATORY SECTION		Received By		Title				Date/Time					
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time					

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					F03-006-71		Page 1 of 1		
Collector Johansen/Pope/Pfister		Company Contact LC Hulstrom		Telephone No. 373-3928		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (237.5'-240')		H2195 (7508)		SAF No. F03-006		Air Quality <input type="checkbox"/>			
Ice Chest No. SMC-600		Field Logbook No. HNF-N-3361		COA 117504ES10		Method of Shipment Federal Express					
Shipped To EBERLINE SERVICES (Formerly TMA)		Offsite Property No. A030254				Bill of Lading/Air Bill No.					
POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage		Preservation		Cool 4C	Cool 4C	Cool 4C	None	None			
		Type of Container		aG	aG	aG	aG	aG			
		No. of Container(s)		1	1	1	1	1			
		Volume		120mL	60mL	120mL	60mL	60mL			
SAMPLE ANALYSIS				Chromium Hex - 7196	NO ₂ /NO ₃ - 353.2	Oil & Grease - 413.1	See item (1) in Special Instructions.	Tritium - H3			
				FIELD:							
Sample No.	Matrix *	Sample Date	Sample Time								
B16W88	SOIL	5-7-03	1050				X	X			B16W88
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS ** The laboratory is to achieve a detection limit of 50.0 pCi/g for Carbon-14. ** The laboratory is to report both kerosene and diesel range compounds from WFTM-D analysis. 15 4/22/03 (1) Technetium-99; Strontium-89,90 -- Total Sr; Isotopic Thorium (Thorium-232); Carbon-14; Iodine-129; Nickel-63; Neptunium-237 Personnel not available to relinquish samples from the 3728 Ref # 1B on 5.1.8.103			
Relinquished By/Removed From <i>Ima... 5/1/03</i>	Date/Time 5/1/03 1440	Received By/Stored In <i>SJGAL... 5/7/03 1440</i>	Date/Time 5/7/03 1440								
Relinquished By/Removed From <i>SJGAL... 5/7/03 1440</i>	Date/Time 5/7/03 1440	Received By/Stored In <i>REF 1B 3728 5/7/03 1440</i>	Date/Time 5/7/03 1440								
Relinquished By/Removed From <i>3728 Ref 1B 5/8/03 0830</i>	Date/Time 5/8/03 0830	Received By/Stored In <i>Ref 1B 3728 5/8/03 0830</i>	Date/Time 5/8/03 0830								
Relinquished By/Removed From <i>Ref 1B 3728 5/8/03 0830</i>	Date/Time 5/8/03 0830	Received By/Stored In <i>FED EX</i>	Date/Time 5/9/03 1100								
Relinquished By/Removed From <i>FED EX</i>	Date/Time 5/9/03 1100	Received By/Stored In <i>Ref 1B 3728 5/9/03 1100</i>	Date/Time 5/9/03 1100								
LABORATORY SECTION				Received By				Title			
FINAL SAMPLE DISPOSITION				Disposal Method				Disposed By			
								Date/Time			
								Date/Time			

**ANALYTICAL SERVICES GROUP**

Richmond, CA Laboratory

SAMPLE RECEIPT CHECKLISTClient: FLR Date/Time received 1000 5-5-03CoC No. FC3-006-67,68Container I.D. No. ERC-98-010 Requested TAT (Days) 45 P.O. Received Yes [] No []**INSPECTION**

1. Custody seals on shipping container intact? Yes [☒] No [] N/A []
2. Custody seals on shipping container dated & signed? Yes [☒] No [] N/A []
3. Custody seals on sample containers intact? Yes [☒] No [] N/A []
4. Custody seals on sample containers dated & signed? Yes [☒] No [] N/A []
5. Packing material is: Wet [] Dry [☒]
6. Number of samples in shipping container: 2
7. Number of containers per sample: 2 (Or see CoC _____)
8. Paperwork agrees with samples? Yes [☒] No []
9. Samples have: Tape [] Hazard labels [] Rad labels [] Appropriate sample labels [☒]
10. Samples are: In good condition [☒] Leaking [] Broken Container [] Missing []
11. Samples are: Preserved [] Not preserved [☒] Preservative _____
12. Describe any anomalies: _____

13. Was P.M. notified of any anomalies? Yes [] No [] Date _____

14. Received by Kir CP Date: 5-5-03 Time: 1000Customer Sample
No.

cpm

mR/hr

wipe

Customer Sample
No.

cpm

mR/hr

wipe

B16W84	240	.015	
B16W85	240	.018	

Ion Chamber Ser. No. 4011Calibration date 3-20-03

Alpha Meter Ser. No. _____

Calibration date _____

Beta/Gamma Meter Ser. No. 99574Calibration date 12-12-03



EBERLINE
SERVICES

ANALYTICAL SERVICES GROUP

Richmond, CA Laboratory

SAMPLE RECEIPT CHECKLIST

Client: FLR Date/Time received 1100 5-8-03

CoC No. F03-006-69

Container I.D. No. GR-01-019 Requested TAT (Days) 45 P.O. Received Yes [] No []

INSPECTION

- Custody seals on shipping container intact? Yes [☒] No [] N/A [☒]
- Custody seals on shipping container dated & signed? Yes [☒] No [] N/A [☒]
- Custody seals on sample containers intact? Yes [☒] No [] N/A [☒]
- Custody seals on sample containers dated & signed? Yes [☒] No [] N/A [☒]
- Packing material is: 1 Wet [] Dry [☒]
- Number of samples in shipping container: _____
- Number of containers per sample: 2 (Or see CoC _____)
- Paperwork agrees with samples? Yes [☒] No []
- Samples have: Tape [] Hazard labels [] Rad labels [☒] Appropriate sample labels [☒]
- Samples are: In good condition [☒] Leaking [] Broken Container [] Missing []
- Samples are: Preserved [] Not preserved [☒] Preservative _____
- Describe any anomalies: _____

13. Was P.M. notified of any anomalies? Yes [] No [] Date _____

14. Received by [Signature] Date: 5-8-03 Time: 1100

Customer Sample No.	cpm	mR/hr	wipe	Customer Sample No.	cpm	mR/hr	wipe
<u>B16 W8</u>	<u>240</u>						

Ion Chamber Ser. No. _____

Calibration date _____

Alpha Meter Ser. No. _____

Calibration date _____

Beta/Gamma Meter Ser. No. 99571

Calibration date 12-12-02

**ANALYTICAL SERVICES GROUP**

Richmond, CA Laboratory

SAMPLE RECEIPT CHECKLIST

Client: FLR Date/Time received 1100 5-8-03

CoC No. F03-006-70

Container I.D. No. C-RC-01-021 Requested TAT (Days) 45 P.O. Received Yes [] No []

INSPECTION

1. Custody seals on shipping container intact? Yes [✓] No [] N/A []
2. Custody seals on shipping container dated & signed? Yes [✓] No [] N/A []
3. Custody seals on sample containers intact? Yes [✓] No [] N/A []
4. Custody seals on sample containers dated & signed? Yes [✓] No [] N/A []
5. Packing material is: Wet [] Dry [✓]
6. Number of samples in shipping container: 2
7. Number of containers per sample: 2 (Or see CoC)
8. Paperwork agrees with samples? Yes [✓] No []
9. Samples have: Tape [] Hazard labels [] Rad labels [✓] Appropriate sample labels [✓]
10. Samples are: In good condition [✓] Leaking [] Broken Container [] Missing []
11. Samples are: Preserved [] Not preserved [✓] Preservative
12. Describe any anomalies:

13. Was P.M. notified of any anomalies? Yes [] No [] Date

14. Received by [Signature] Date: 5-8-03 Time: 1100

Customer Sample No.	cpm	mR/hr	wipe	Customer Sample No.	cpm	mR/hr	wipe
<u>B16W87</u>	<u>240</u>						

Ion Chamber Ser. No. Calibration date Alpha Meter Ser. No. Calibration date Beta/Gamma Meter Ser. No. 99574Calibration date 12-12-03

**ANALYTICAL SERVICES GROUP**

Richmond, CA Laboratory

SAMPLE RECEIPT CHECKLIST

Client: FLR Date/Time received 1100 5-9-03

CoC No. F03-006-71

Container I.D. No. SML-600 Requested TAT (Days) 45 P.O. Received Yes [] No []

INSPECTION

1. Custody seals on shipping container intact? Yes [☒] No [] N/A []

2. Custody seals on shipping container dated & signed? Yes [☒] No [] N/A []

3. Custody seals on sample containers intact? Yes [☒] No [] N/A []

4. Custody seals on sample containers dated & signed? Yes [☒] No [] N/A []

5. Packing material is: Wet [] Dry [☒]

6. Number of samples in shipping container: 1

7. Number of containers per sample: 2 (Or see CoC _____)

8. Paperwork agrees with samples? Yes [☒] No []

9. Samples have: Tape [] Hazard labels [] Rad labels [☒] Appropriate sample labels [☒]

10. Samples are: In good condition [☒] Leaking [] Broken Container [] Missing []

11. Samples are: Preserved [] Not preserved [☒] Preservative _____

12. Describe any anomalies: _____

13. Was P.M. notified of any anomalies? Yes [] No [] Date _____

14. Received by [Signature] Date: 5-9-03 Time: 1100

Customer Sample				Customer Sample			
No.	cpm	mR/hr	wipe	No.	cpm	mR/hr	wipe
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

Ion Chamber Ser. No. _____

Calibration date _____

Alpha Meter Ser. No. _____

Calibration date _____

Beta/Gamma Meter Ser. No. 99574Calibration date 12-12-03